

**Digest of
Public Submissions and Responses
On the
Draft Freshwater Pearl Mussel Sub-Basin
Management Plans**



Produced by NS 2, funded by DEHLG

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1.0 Introduction

Draft Freshwater Pearl Mussel Sub-Basin Management Plans were completed for the twenty seven SAC populations in the country and were published in March 2009. These were subject to public consultation for three months until 22nd June 2009. Activities included a variety of meetings, briefings and information sessions. This report summarises the submissions made on the draft plans during that period and presents the responses to those submissions.

1.1 Background

Legal protection and red listing

The pearl mussel *Margaritifera margaritifera* (L., 1758) is protected under several tiers of national and international legislation:

- The Wildlife Act, 1976 and Wildlife (Amendment) Act, 2000 (The pearl mussel was given protected species status under The [Wildlife Act, 1976](#) (Protection of Wild Animals) Regulations, 1990, S.I. No. 112, 1990)
- The Habitats Directive (Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora) as transposed by the European Communities (Natural Habitats) Regulations, S.I. 94/1997, as amended by S.I. 233/1998 and S.I. 378/2005. The pearl mussel is listed on Annex II and Annex V to the Directive,
- Bern Convention Appendix 3

The freshwater pearl mussel *Margaritifera margaritifera* (L., 1758) is also on the following red data lists:

- IUCN Red Data List as Endangered (IUCN, 1996)
- Red Data (Ireland) as Critically Endangered (Moorkens, 2006; Byrne *et al.*, 2009)

The Republic of Ireland currently has stretches of rivers in 19 SACs designated for the pearl mussel covering 27 sub-basins. 26 of these sub-basins hold *Margaritifera margaritifera* and one, the River Nore, contains *M. durrovensis*.

Article 1 of the Habitats Directive states:

For the purpose of this Directive:

(a) *conservation means a series of measures required to maintain or restore the natural habitats and the populations of species of wild fauna and flora at a favourable status*

;

(i) *conservation status of a species means the sum of the influences acting on the species concerned that may affect the long-term distribution and abundance of its populations within the territory referred to in Article 2;*

The conservation status will be taken as "favourable" when:

— *population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats, and*

- *the natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future, and*
- *there is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis;*

Article 6.1 of the Habitats Directive states:

For special areas of conservation, Member States shall establish the necessary conservation measures involving, if need be, appropriate management plans specifically designed for the sites or integrated into other development plans, and appropriate statutory, administrative or contractual measures which correspond to the ecological requirements of the natural habitat types in Annex I and the species in Annex II present on the sites.

Article 6.2 of the Habitats Directive states:

Member States shall take appropriate steps to avoid, in the special areas of conservation, the deterioration of natural habitats and the habitats of species as well as disturbance of the species for which the areas have been designated, in so far as such disturbance could be significant in relation to the objectives of this Directive.

How legal protection can be implemented

Under Article 6 of the Habitats Directive as mentioned above Member States must show that they have taken the steps taken to achieve the Directives objectives and must avoid deterioration in those natural habitats and habitats of species. To achieve these requirements in Ireland, the European Communities Environmental Objectives (Freshwater Pearl Mussel) Regulations 2009 (S.I. No. 296) have been adopted and require:

- a) Specific objectives and targets, in accordance with Regulation 2 and the Fourth Schedule, and deadlines for their achievement;*
- b) The investigation of sources of pressures leading to the unfavourable conservation status of the pearl mussel;*
- c) The establishment of a programme, including a timeframe, for the reduction of pressures giving rise to unfavourable conservation status. The programme shall include pressure reduction targets and deadlines, either in relation to individual pollutants or to particular sectors or activities or both, to be implemented within the sub-basin, or parts of the sub-basin as appropriate;*
- d) A detailed programme of monitoring to be implemented within the sub-basin, or parts of the sub-basin as appropriate, in order to evaluate the effectiveness of measures and progress made towards restoring favourable conservation status .*

In addition to this, the Water Framework Directive (WFD) requires that a programme of measures (POMs) is established in order to achieve its environmental objectives. The EU WFD (2000/60/EC), which came into force on 22 December 2000, is the most important piece of European water legislation. It aims to promote common approaches, standards and measures for water management on a systematic and comparable basis throughout the European Union. It establishes a new, integrated approach to the protection, improvement and sustainable use of Europe's rivers, lakes, transitional waters (estuaries), coastal waters and groundwaters.

The WFD POMs include "basic measures" which include those measures required to implement Community legislation for the protection of water including measures specified under 11 named Directives, one of which is the Habitats Directive. The programme of measures will be established by the 22 of March 2010 and must be made operational by 22 December 2012 at the latest.

Consequently, the sub-basin plans and environmental objectives established for those pearl mussel populations designated under the Habitats Directive are also afforded protection under the Water Framework Directive's river basin programme of measures. They form part of the basic measures and the objectives for these protected areas must be achieved.

1.2 Consultation and Participation Activities

A programme of consultations commenced on the *draft freshwater pearl mussel sub-basin management plans* on the 27 March 2009. Members of the NS 2 project team were involved in the combined public consultation process with the River Basin Management Plans where the draft freshwater pearl mussel sub-basin management plans were also presented.

The meetings held were as follows:

- Central Library, Tullow St., Co. Carlow 20th April 2009
 - Enniscorthy, Wexford County Council, Co. Wexford 23rd April 2009
 - Clonmel Library, Emmett Street, Co. Tipperary 27th April 2009
 - Council Chamber, Aras on Chontae, Portlaoise, Co. Laois 28th April 2009
 - Mount Errigal Hotel, Letterkenny, Co. Donegal 28th April 2009
 - Clare County Council HQ, New Road, Ennis, Co. Clare 28th April 2009
 - Regional Training Centre, Mayo County Council, Co Mayo 29th April 2009
 - Central Library, Lady Lane, Co. Waterford 30th April 2009
 - County Hall, Prospect Hill, Galway, Co. Galway 30th April 2009
 - Mill Park hotel, Donegal Town, Co. Donegal 30th April 2009
 - Limerick County Council, Dooradoyle, Co. Limerick 5th May 2009
 - Council Chambers, County Hall, John Street, Co. Kilkenny 5th May 2009
 - GAA Sports Complex, Mallow, Co. Cork 7th May 2009
 - Killarney Library, Rock Road, Co. Kerry 12th May 2009
 - Wicklow County Council, County Buildings, Co. Wicklow 14th May 2009
- Further stakeholder consultations were held with the fisheries board scientific officers on the 22nd of May in Galway.
 - The NS 2 project team has also undertaken consultations with the agriculture section of DAFF on an ongoing basis.
 - All submissions received were reviewed and, where appropriate, will be incorporated into the final freshwater pearl mussel sub-basin management plans.

A National Conservation Working Group (NCWG) was also established where consultations were also carried out with the relevant public authorities.

1.3 Scope of the Digest

This digest is a compilation of written submissions received during the consultation period. Responses have been made to submissions, and all are being considered during the development of the final Freshwater Water Pearl Mussel sub-basin management plans. This digest of submissions and responses is being distributed to those who took part in the process and other interested parties, and will also be available to download at http://www.wfdireland.ie/docs/5_FreshwaterPearlMusselPlans/Submission%20Digest%20Report/

2.0 Summary of submissions

2.1 Written submissions

A total of 28 written submissions were received as part of the consultation process, 4 from Local Authorities, 6 from sectoral interest groups or NGOs, 18 from public authorities.

2.2 Topics covered

Written submissions were examined and were divided into themed groups.

3.0 Detailed Comments

Written submissions are outlined in this section together with a considered response. Submissions and responses are grouped where possible as described above (Section 2.2).

3.1 Referencing system

Reference codes have been assigned to the organisations and individuals that made submissions (see table 2 below). The codes allow the reader to identify the source of the submission in section 3.2

Table 2. Reference system to identify response to submissions in section 3.2.

Ref	Name	Organisation	Date Received	LAs	NGOs	PAs
NS2 FPM 001	Philip Carr	Forestry Service	18/06/09			√
NS2 FPM 002	Gerry Boyle	An Teagasc	19/06/09			√
NS2 FPM 003	Patrick Kilfeather	Southern Regional Fisheries Board	19/06/09			√
NS2 FPM 004	Milton Matthews	Northern Regional Fisheries Board	19/06/09			√
NS2 FPM 005	Richard Gregg	Dep. Of Agriculture, Fisheries and Food	19/06/09			√
NS2 FPM 006	Jacinta Reynolds	Cork County Council	19/06/09	√		
NS2 FPM 007	Dr. Fiona Kelly	Central & Regional Fisheries Boards	19/06/09			√
NS2 FPM 008	Mary Buckley	Irish Creamery Milk Suppliers Association	19/06/09		√	
NS2 FPM 009	Mick Boyce	Kerry County Council	22/06/09	√		
NS2 FPM 010	Donnachadh Byrne	Eastern Regional Fisheries Board	22/06/09			√
NS2 FPM 011	Larry Stapleton	Environmental Protection Agency	22/06/09			√
NS2 FPM 012	Monica Lee	Geological Survey of Ireland	22/06/09			√
NS2 FPM 013	Karen Creed	Environmental Protection Agency	22/06/09			√
NS2 FPM 014	John Gavin	Laois County Council	22/06/09	√		
NS2 FPM 015	Michael Egan	National Roads Authority	22/06/09			√
NS2 FPM 016	Anja Murry	An Taisce (Clodiagh submission)	22/06/09			√
NS2 FPM 017	Anja Murry	An Taisce (27 plan submission)	22/06/09			√
NS2 FPM 018	Philip O' Dea	Coillte	22/06/09			√
NS2 FPM 019	Noel Carr	Federation of Irish Salmon & Sea Trout Anglers	23/06/09		√	
NS2 FPM 020	Greg Forde	Western Regional Fisheries Board	24/06/09			√
NS2 FPM 021	Stephanie O'Toole	Coomhola Salmon Trust	24/06/09		√	
NS2 FPM 022	Fran Igoe	Integrated Resource Development Duhallow	13/07/09		√	
NS2 FPM 023	Dr. Fiona Kelly	Central Fisheries Board (response to RBMP)	19/06/09			√
NS2 FPM 024	Pat Farrell	The Irish Farmers Association (ERBD)	22/06/09			√
NS2 FPM 025	Peter Mantle	Delphi Fisheries	06/05/09		√	
NS2 FPM 026	Dr. Denis Doherty	ESB Fisheries Conservation	07/05/09			
NS2 FPM 027	Tracey Duffy	Clare County Council	03/07/09	√		
NS2 FPM 028	Michael McCore	Ardara Anglers Association	18/06/09		√	
NS2 FPM 029	Pat Farrell	Irish Farmers Association (NWIRBD)	19/06/09			√
NS2 FPM 030	Pat Farrell	Irish Farmers Association (ShIRBD)	22/06/09			√
NS2 FPM 031	Pat Farrell	Irish Farmers Association (SWRBD)	19/06/09			√
NS2 FPM 032	Pat Farrell	Irish Farmers Association (SERBD)	19/06/09			√
NS2 FPM 033	Pat Farrell	Irish Farmers Association (WRBD)	19/06/09			√
NS2 FPM 034	Dr. Fiona Kelly	Central Fisheries Board (response to NB RBMP)	19/06/09			√

3.2 Submissions and responses

3.1.1 EPA Recommendations

Submission Reference No.	Issues Identified	Response
NS2_FPM_011 NS2_FPM_013	<p><i>Chapter 1, Linkages between Sub-basin Plans and RBDs</i></p> <p>It is strongly recommended that the parent RBD in which each SBMP is located should be clearly identified. (Strongly recommended)</p> <p>In parallel the RBD draft plans and the www.wfdireland.ie and www.ni-environment.gov.uk/wfd websites should identify the RBD in which each SBMP is located and provide a summary of their content as required by Annex VII(A)(8). (Strongly recommended)</p>	<p>Each parent RBD will be identified in each SBMP in the introduction and in Section 3.1 as recommended.</p> <p>Comment noted.</p>
NS2_FPM_011 NS2_FPM_013	<p><i>Chapter 1, Protected Areas Standards and Objectives</i></p> <p>Section 1.4 should include a clear link between WFD and FPM Regulations regarding environmental objectives and standards. (Statutory requirement)</p>	<p>Comment noted and text added to final plans</p>
NS2_FPM_011 NS2_FPM_013	<p><i>Chapter 1, Legislative links between WFD and Protected Areas</i></p> <p>In Section 1.6 the specific legislative linkages between the WFD and Natura 2000 sites should be stated. (Statutory requirement)</p>	<p>More specific references have been added to Section 1.6.2</p>
NS2_FPM_011 NS2_FPM_013	<p><i>Chapter 2, Table 2.1</i></p> <p>It is strongly recommended that an additional column in Table 2.1 “List of the SBMPs designated as SACs for FPM” populations to indicate which RBD contain the specific sub-basin. (Strongly recommended)</p>	<p>Comment noted.</p>
NS2_FPM_011 NS2_FPM_013	<p><i>Chapter 3, CORINE data</i></p> <p>The use of level 4, 5 and 6 CORINE data to improve the detail regarding pasture and peat land cover classes is strongly recommended. (Strongly recommended) It is further strongly recommended that, this remotely sensed data should be ultimately ground-truthed by field surveys where possible and appropriate. (Strongly recommended)</p>	<p>CORINE level 6 data were utilized in the sub-basin management plans (see Sections 3.1 in each of the plans). Due to the coarseness of the data and the age of the data however, they were used with caution. As a result, aerial photography was also used where available, and catchment walkovers and pressure assessments have been carried out as part of field work being undertaken through the NS2 project in 2009. Both the aerial photography and the catchment walkovers will provide more accurate information on land</p>

Submission Reference No.	Issues Identified	Response
		cover and pressures.
NS2_FPM_011 NS2_FPM_013	<p><i>Chapter 3, SACs traversing sub-basin catchment boundaries</i></p> <p>In some cases (e.g. the Owenea Sub-basin) SAC boundaries can traverse the catchment boundary of the sub-basin. At RBD level it is, therefore, strongly recommended that coordination of the programme of measures occurs across the SAC. (Strongly recommended)</p>	<p>The measures in the 27 Sub-basin Management Plans are designed to restore the mussel populations to favourable conservation status and are, therefore, confined to the catchments of those populations. The SACs are sometimes larger than the catchments because each SAC is designated for a number of Habitats Directive Annex I habitats and/or Annex II species. Should measures be required under the WFD to protect/restore the other designated habitats/species in these or other SACs, that tailored Sub-basin Management Plans may be produced.</p>
NS2_FPM_011 NS2_FPM_013	<p><i>Chapter 3, Sensitivity of Information on location FPM Populations</i></p> <p>In some instances, particularly for small sub-basins, the locations of FPM populations would be relatively easy to find by the would-be poacher. It is recommended that consideration be given whether it is necessary to include large-scale maps indicating FPM locations.</p>	<p>NPWS do not consider it necessary to include such detailed data within the final printed plan. The detailed <i>Margaritifera</i> data will be made available through GIS layers to the 'relevant public authorities' listed on the Second Schedule of the European Communities Environmental Objectives (Freshwater Pearl Mussel) Regulations, S.I. 296 of 2009, as well as any other relevant authorities or stakeholders.</p>
NS2_FPM_011 NS2_FPM_013	<p><i>Chapter 3, Table 3.3</i></p> <p>In Table 3.3 summarising the phosphate results the column headed "95%ILE PO4" should be labelled "95%ILE PO4-P" to indicate these values comprise phosphorus only. (Strongly recommended)</p>	<p>Comment noted.</p>
NS2_FPM_011 NS2_FPM_013	<p><i>Chapter 3, WFD Status - Figures</i></p> <p>The figures in Chapter 3, which present WFD status results colour code the water body sub-catchments rather than the river or lake network, i.e. a catchment polygon is coded as opposed to the river or lake waterbody. This contrasts with how the RBMP present their status maps or the specification of the WFD itself (see Annex V). For consistency it is strongly recommended that the SBMPs should present status maps in the same format as that used in the RBMPs. (Strongly recommended)</p>	<p>Comment noted.</p>
NS2_FPM_011 NS2_FPM_013	<p><i>Chapter 3, Water Body Status Update 2009</i></p> <p>The EPA is due to provide the RBDs with a water body status update</p>	<p>Comment noted.</p>

Submission Reference No.	Issues Identified	Response
	during 2009. This latest data should be used when finalising the sub-basin plans, as it will be for the parent RBMPs. (Strongly recommended)	
NS2_FPM_011 NS2_FPM_013	<i>Chapter 3, Chemical Status</i> The WFD status information provided in Chapter 3 focuses exclusively on ecological status. Where available, chemical status data, i.e. chemical status as defined by the WFD comprising Annex IX and Annex X substances should also be included. (Strongly recommended)	Comment noted.
NS2_FPM_011	<i>Chapter 4, DPSIR Sequence to reflect RBMPs</i> The draft RBMPs present the pressures in each RBD first and then present the status of water bodies followed by the response in the form of basic and supplementary measures. This follows the pressure-state-response model of the OECD and the drivers-presures-status-impact-response (DPSIR) model of the European Environment Agency. It would be preferable that the sub-basin plans follow a similar model. There, Chapter 4 should ideally precede Chapter 3. (Strongly recommended)	Comments noted.
NS2_FPM_011	<i>Chapter 4, Morphological Pressures – Barriers to Fish Migration</i> The investigation planned in Section 4.2.1 on morphological pressures concerning barriers to fish migration will also need to include the assessment of the beneficial uses of such structures and the potential impact on the wider environment to their removal or modification (e.g. flood control) (Strongly recommended)	The investigations will take into account the potential impact on the wider environment of their removal or modification.

Submission Reference No.	Issues Identified	Response
NS2_FPM_011	<p><i>Chapter 4, Peat Exploitation – Details concerning method and extent of harvesting</i></p> <p>In Section 4.2.2 concerning peat exploitation it is strongly recommended that some indication is provided on the method of harvesting (e.g. traditional hand cut, sausage machine, industrial level) and the extent of the activity (percentage intact bog versus percentage exploited bog). It will also be useful to know if the drains of the bog intercept the groundwater table thereby lowering groundwater levels and baseflows to downstream rivers. Field investigations will be needed in most cases to ascertain this information.</p>	<p>The NS2 fieldwork will identify the commercial or private nature of the peat exploitation occurring within the 27 pearl mussel catchments and assess the impact of this pressure on the pearl mussel populations.</p>
NS2_FPM_011	<p><i>Chapter 4, Abstractions – Definition of “ Large Abstractions ”</i></p> <p>In Section 4.2.3 concerning abstractions, it is strongly recommended that the definition of a “large” abstraction in the National Register should be explained. It is also strongly recommended that a description is included on the risk assessment methodology used to determine whether a water body was at risk from abstractions.</p>	<p>Comments noted Editorial*</p>
NS2_FPM_011	<p><i>Chapter 4, Acidification and Forest Stands</i></p> <p>In Section 4.3.1 concerning forestry the SBMPs (excluding the Nore) indicate that acidification impacts arise from forest stands on acid geological settings. It is strongly recommended that the more appropriate term is “<i>poorly buffered acid-sensitive soils</i>” to emphasis the fact that these geologies have little effective buffering capacity and to reflect that it is the pollutant filtering, particularly by coniferous forests, that is the main source of increased acidity I the receiving waters beyond natural levels.</p>	
NS2_FPM_011	<p><i>Chapter 4, Teagasc Soil Maps v’s Soil Phosphorus Content</i></p> <p>The agricultural assessment in Section 4.3.2 is confined to use of the Teagasc/EPA soils map and Teagasc animal stocking density. It is strongly recommended that soil phosphorus content be used as a more representative measure of pressure. This information should be available from Teagasc at District Electoral Division (DED) level.</p>	

Submission Reference No.	Issues Identified	Response
NS2_FPM_011	<p><i>Chapter 4, Identification of main type of farming activity</i> A gap in the assessment is the identification of what is the main type of farming occurring in the catchment; beef, dairy, sheep, etc. It is strongly recommended that, where available, local information based on farm surveys should be used which allow for better estimation of the extent and location of this pressure within the catchment.</p>	Information in relation to the land use/farming practice obtained through field surveys will be included in the final plans. Additional information from DAFF is awaited.
NS2_FPM_011	<p><i>Chapter 4, Stocking Density Units</i> In Section 4.3.2 when quoting stocking density (Livestock Units (LU)/hectare) it is strongly recommended that consideration be given to the inclusion of a mean or median value across the sub-basin, rather than a maximum, as a measure of the level of stocking density. In addition, the inclusion of a definition of what is considered low, medium and high stocking density is strongly recommended.</p>	Editorial*
NS2_FPM_011	<p><i>Chapter 4, Point Source Pressures – Dewatering impacts of quarries</i> In Section 4.4, concerning point source pressures, it is strongly recommended that the de-watering impacts of quarries (where present) on adjacent water bodies should also be examined.</p>	The location and type of quarry activities present in the catchment will be verified in the final plans.
NS2_FPM_011	<p><i>Chapter 4, Dangerous Substances Monitoring – Chemical Status</i> Many of the sub-basins include in Section 4.4 a summary of dangerous substances monitoring, where available. This information should be located in chapter 3 concerning water body status as it concerns Chemical Status as defined by the WFD. (Strongly recommended)</p>	Comment noted.
NS2_FPM_011	<p><i>Chapter 5, Collection of data to improve knowledge of pressures</i> This chapter provides a good summary of proposed monitoring although a more detailed programme will be required for the final plan. It is recommended that consideration be given to the collection of data to improve knowledge of pressures. This will be in the form of farm surveys, visiting point source discharges and through improved GIS data layers.</p>	A more detailed monitoring programme will be presented in the final plans, including in so far as possible, the locations of physical and biological monitoring points (sites). Farm surveys and inspections of discharges are measures under the plans and will be the responsibility of DAFF and the Local Authorities.

Submission Reference No.	Issues Identified	Response
NS2_FPM_011	<p><i>Chapter 5, Monitoring of Chemical status and Hydrological Information</i></p> <p>It is recommended that consideration be given to the inclusion in Section 5.2, where available, the monitoring of chemical status (Annex IX and X substances) and hydrological information where appropriate to improve knowledge on the impact of various pressures.</p>	Comment noted.
NS2_FPM_011	<p><i>Chapter 6, Consistency of terminology in SBMPs and RBMPs</i></p> <p>Chapter 6 uses terminology to describe measures, which is different to that described in the draft RBMPs and the WFD itself. A consistent terminology should be used in the SBMPs as is used in the Draft RBMPs. (Strongly recommended)</p>	Comment noted.
NS2_FPM_011	<p><i>Chapter 6, Role of the SBMPs re: Identification of RBMP Supplementary Measures</i></p> <p>Tables 6.1 and 6.2 provide a list of basic and supplementary measures, which will be undertaken at RBD level, and Table 6.3 provides a suite of measures specific to the protection of the FPM and its habitat. The sub-basin plans should influence what supplementary measures of the RBMP apply to water bodies within the sub-basins. The final sub-basin plans should indicate at water body level the specific measures that will apply. (Strongly recommended).</p>	It is intended that the sub-basin plans will provide water body level specific measures and will detail the specific measures in Tables 6.1-6.3 which are applicable, plus any other measures identified as being necessary on the basis of 2009 catchment walkovers and pressures assessment and the results of biological element surveys, plus the results of revised 2009 interim status from the EPA.
NS2_FPM_011	<p><i>Chapter 6, Contact Point Re: Submissions</i></p> <p>The draft FPM plans do not provide any contact point for interested parties to make submissions. This is Mandatory as they are currently out for consultation. (Statutory requirement) It is noted however, that the relevant information is provided in the notifications in the press and also on the NPWS and NIEA websites.</p>	<p>Comment noted:</p> <p>Contact points will be included in any future draft sub-basin plans</p>
NS2_FPM_013	<p><i>RBD Pearl Mussel Technical Group</i></p> <p>It is recommended that the EPA be represented on this group.</p>	The EPA have been involved in discussions on the composition of the RBD group and further direct contact has been made between NPWS and the EPA on the issue.

3.1.2 Point source discharges including wastewater and industrial discharges

Submission Reference No.	Issues Identified	Response
NS2_FPM_003 NS2_FPM_004 NS2_FPM_007	Under the actions in Table 6.1 the Water Pollution Acts and Regulations are listed with no mention of the fisheries acts.	Comment noted.
NS2_FPM_003 NS2_FPM_004 NS2_FPM_007	Under the actions in Table 6.1 it is stated “notify local authorities of accidental discharges and spillages of polluting materials which enter or are likely to enter waters”. Who leads this, who are the relevant persons, the fisheries boards should be entered here.	Comments noted. LAs, the EPA and the Fisheries Boards will be identified as leads.
NS2_FPM_006	<p>The Munster Blackwater and its tributary, the Allow, should not be included in the proposed list of Special Areas of Conservation. To put the issues in context Tables No. 2 and No. 3 (see Appendix I for full tables) show the number of discharges to proposed Freshwater Pearl Mussel rivers nationally and in the SWRBD respectively.</p> <p>It is notable that 59% of all discharges to freshwater pearl mussel rivers are to the Munster Blackwater (including the Allow tributary); the vast majority of the discharges are in County Cork and a small number are in County Kerry. Included in the discharges are thirteen quarries. With regard to diffuse sources of pollution there are circa 5,000 farms and 23,000 on-site waste water treatment systems (predominantly septic tanks) in the catchment.</p> <p>Even if the proposed designation of the Munster Blackwater as Freshwater Pearl Mussel river did not reduce the status of all of the waters to at least less than good status, as required by the classification system set out in the Regulations, many of the water bodies would not achieve good status.</p>	<p>NPWS to comment</p> <p>The Munster Blackwater is an area designated under the Habitats Directive as a candidate Special Area of Conservation and as such is afforded the full protection of the law. The Munster Blackwater main channel was designated for the pearl mussel and therefore must be included within SI 296 of 2009 and must have a Sub-basin Management Plan prepared. The selection of the cSAC was based on the mussel population and did not relate to the pressures in the catchment.</p> <p>It is intended that the sub-basin plans will provide water body level specific measures and will detail the specific measures in Tables 6.1-6.3 which are applicable, plus any other measures identified as being necessary on the basis of 2009 catchment walkovers, pressures assessment, the results of biological element surveys, and the results of revised 2009 interim status from the EPA.</p> <p>The high level of the pressures in the Munster Blackwater is appreciated. Measures will only be implemented at those sites where investigation and risk assessment show that specific pressures need to be remediated to restore the pearl mussels to favourable conservation status. Prior to the implementation of these measures a review and prioritization of the most cost effective and beneficial measures will be carried out in order to ensure no sector of society is burdened with a disproportionate share of</p>

Submission Reference No.	Issues Identified	Response
	<p>Therefore, Cork County Council believes that it would be impossible in the short term to achieve the requirements proposed by the draft Regulations, i.e. by 2015 as required by the Water Framework Directive. In the long term it would be possible but so expensive and socially disruptive as to be unacceptable.</p> <p>Article 4.1 (c) of the Water Framework Directive states, in respect of environmental objectives for protected areas: <i>Member States shall achieve compliance with any standards and objectives at the latest 15 years after the date of entry into force of this Directive, unless otherwise specified in the Community legislation under which the individual protected areas have been established.</i></p> <p>The relevant Community legislation in this case is the Habitats Directive. Article 6.4 states as follows regarding Special Areas of Conservation: <i>If, in spite of a negative assessment of the implications for the site and in the absence of alternative solutions, a plan or project must nevertheless be carried out for imperative reasons of overriding public interest, including those of a social or economic nature, the Member State shall take all compensatory measures necessary to ensure that the overall coherence of Natura 2000 is protected. It shall inform the Commission of the compensatory measures adopted.</i></p> <p>Cork County Council believes that the measures that would be necessary to achieve good conservation status in the Munster Blackwater should not be undertaken because of the overriding public interest of social and economic nature. Cork County Council believes that this exemption is permitted by the Habitats Directive.</p>	<p>the costs of implementation. This summer's field work will identify some locations, although the identification of all agricultural pressure sources is likely to take some time.</p> <p>The Sub Basin Management Plans are plans that are directly connected with and are necessary to the management of the SAC</p>

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NS2_FPM_006	<p>Section 4.4 Point Discharges Ownagappul sub-basin plan: The new waste water treatment plant for Ardroom is downstream of the Freshwater Pearl Mussel area although final works are still required to disconnect the existing septic tank that discharges within the FPM area.</p> <p>While accepting that measures need to be taken to protect the Freshwater Pearl Mussel, we have to emphasise that these abstractions are vital to West Cork.</p>	Comment noted.
NS2_FPM_006	<p>Section 4.4 Point Discharges, Bandon sub-basin management plan Dunmanway waste water treatment plant discharges within the FPM area and there are proposals to upgrade this plant in the near future.</p>	Comment noted.
NS2_FPM_013	<p>Integrated Pollution Prevention Control Directive It is recommended that the last sentence of the first paragraph be reworded to read – Undertake reviews of existing licences as required (taking account of WFD objectives).</p>	Comments noted.
NS2_FPM_013	<p>Urban Waste Water Treatment Plants It is recommended that the fourth bullet point under this heading be reworded to read - Review existing Industrial Pollution Prevention Control licence conditions as required and reduce allowable pollution load if required.</p>	Comments noted.
NS2_FPM_013	<p>Waste Water Discharge Authorisation Regulations The Agency is not required to review waste water discharge licences at intervals of not less than three years. It may review a licence at any time not less than three years from the date on which the licence</p>	Comments noted

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	<p>or revised licence was granted or with the consent of the licensee. The requirement to review waste water discharge licences is at a time not exceeding six years from the date on which the licence or revised licence was granted or upon an application by the licensee. It is recommended that this section is reworded to reflect the requirements of the Waste Water Discharge (Authorisation) Regulations, 2007 (S.I. No. 684 of 2007).</p>	
NS2_FPM_013	<p>Environmental Objectives (Surface Water) Regulations It is recommended that the last sentence of the second bullet point is reworded to read – Undertake an assessment of existing licences to determine if a review is required to take into account the new environmental quality standards. Review existing licences as required.</p>	Editorial* comment.
NS2_FPM_014	<p>Laois County Council relies on Central Government for financial assistance in providing upgrades to waste water treatment plants and collections systems as well as upgrades to and new water supplies. It has a number of schemes to upgrade existing sewerage schemes with the Department of Environment, Heritage and Local Government at various stages of approval. It is not likely that Laois County Council will have carried out sufficient works to bring sub-catchments effected up to the required standards by 2015.</p>	<p>The final plans will identify and prioritise WWTP for up-grade for the conservation of pearl mussel. The allocation of funding to carry out such works is the responsibility of Water Services DEHLG.</p>
NS2_FPM_028	<p>The river Owenea is a Special Area of Conservation. We consider that pollution of the river water is the cause of this decline and imminent extinction of the Pearl Mussel. The main source of pollution is the discharge of raw sewage into the river from the septic tank that is the</p>	<p>Comment noted The waste water treatment facilities in Glenties have been further investigated during 2009, these data are currently being reviewed and the final plan shall, if it is judged necessary, include measures to up-grade the system.</p>

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	collecting point for the sewage and household waste for the whole town of Glenties. This town with a very large Community School together with extra housing has had a huge increase in sewage in the period. A video of this can be seen on 'You Tube' under 'Glenties Septic Tank'.	

3.1.3 Landfills

Submission Reference No.	Issues Identified	Response
NS2_FPM_013	With particular reference to the Licky Sub-Basin Management Plan, it should be noted that the information included in relation to a Waste Management Facility at Garrynagree is incorrect and out of date. It is recommended that this be updated taking into account that the Agency refused the application (Reg. No. P0187-01) for a Waste Management Facility at this location on the 16th of February 2006.	Comment noted.

3.1.4 Agriculture

Submission Reference No.	Issues Identified	Response

Submission Reference No.	Issues Identified	Response
	<p>It is Teagasc's position that a thorough assessment of cost-effectiveness, specifically within the geo-environmental context for each individual FWPM sub-basin, is a prerequisite to applying the precautionary principle without invoking unnecessary and disproportionate costs. Teagasc is committed to contributing constructively and proactively to the discussions on the implementation of the FWPM Sub-Basin Management Plans.</p>	
<p>NS2_FPM_003 NS2_FPM_004 NS2_FPM_007</p>	<p>National GIS dataset on overgrazing developed by CFB using expert judgement (from aerial surveys). It needs to be emphasised that this dataset was compiled only for salmon and not for other fish species. This dataset needs to be updated and the impact on passage on other fish species needs to be assessed.</p>	<p>Comment noted.</p> <p>The limitation of this dataset is acknowledged and will be reflected in the interpretation of the data.</p>
<p>NS2_FPM_003 NS2_FPM_004 NS2_FPM_007</p>	<p>Water abstraction by farmers and washing of tankers.</p> <p>Agricultural Measures: Who enforces these (often fishery boards). In our considered view, the exempted development provisions forming part of the Planning Regulations have allowed in many instances the carrying out of works by farmers, which have resulted in the disturbance of river bed sediments, and the transfer downstream of large quantities of silts and other matter which settle out in salmonid (and potentially FPM) nursery and spawning areas. We would recommend this as an immediate priority area for action. No works of this nature likely to impact on the downstream fisheries including FPM resource should be permitted without a system of prior authorisation as to timing and methodology. We recommend that NPWS and the Fisheries Boards act as the lead authority in this regard.</p>	<p>Notifiable Action: abstracting water for irrigation or other purposes</p> <p>Comment noted.</p> <p>Siltation arising from various sources has been highlighted as one of the main pressures on freshwater pearl mussel habitats. The possible inclusion of such works under a system of prior authorization will be discussed further by the National Conservation Working Group. The adoption of such an authorisation system would require the support of DEHLG and DAFF.</p>

Submission Reference No.	Issues Identified	Response
NS2_FPM_003 NS2_FPM_004 NS2_FPM_007	As part of the Management Plans, cognisance should be taken of the provisions of Supplementary Measure 4 of REPS, where it is a prescribed requirement that a riparian buffer zone be placed in long term set aside along waters in pSAC's, be at minimum 10 metres in width. Consideration should also be given to allowing such buffer zones to form part of the riparian program under the Forest Services's Native Woodland Scheme, where adjoining lands have been acquired for this scheme.	<p>The catchment walkovers and risk assessments should highlight river stretches where a lack of riparian buffer is an issue or causing an impact together with the surrounding land-use type. From this, we will be in a better position in the final plans to establish where the appropriate measure lies together with an indication of who enforces it.</p> <p>The usefulness of these potential measures may now be limited by the reductions in funding and their voluntary nature.</p>
NS2_FPM_005	Notwithstanding the need to protect the FPM, there is a need to be mindful of the implications of measures for agriculture in the areas concerned. In particular, the Nore catchment and the Munster Blackwater catchment, which are largely agricultural, appear to have large areas delineated for the possible application of measures while the FPM populations in those catchments are found only in a small number of small areas within these catchments. It is crucial that the continuation of sustainable agriculture in the wider FPM catchment areas is maintained.	The freshwater pearl mussel sub-basin catchment boundaries as delineated in the sub-basin management plan show the entire catchment contributing water to the mussel population. It was necessary to delineate these catchments as Article 13 (5) of the WFD (River Basin Management Plans) states that: " <i>River basin management plans may be supplemented by the production of more detailed programmes and management plans for sub-basin, sector, issue, or water type, to deal with particular aspects of water quality</i> ". Measures will only be applied in areas where investigations show that specific pressures need to be remediated. The measures will also be subject to cost benefit analysis.
NS2_FPM_005	Ireland's Action Programme under the Nitrates Directive was implemented by way of Regulations (SI No. 788 of 2005, SI No. 378 of 2006 and SI No. 101 of 2009) that place legally binding obligations on all farm holdings. The Regulations have only been in operation since 2006 and it will take time for these to show effect but it is expected that these measures will lead in time to improved use of nutrients in agriculture and a consequent improvement in water quality, which will have a positive impact on the habitat of the FPM.	<p>The GAP Regulations are basic measures as detailed in the RBMP. In some pearl mussel catchments, additional measures may be required and these will be identified in the sub-basin plans following extensive field surveys undertaken in the summer 2009.</p> <p>While it is recognised that GAP Regulations are likely to lead to general improvements in water quality, agriculture in many of these mussel catchments is in high risk situations. Unless GAP is designed to protect the most sensitive receptor in the highest risk physical situation (e.g. soils, slope, climate etc.) it will not be adequate to protect <i>Margaritifera</i>. Should it be argued that the GAP Regulations are adequate to meet all the standards necessary for the conservation of <i>Margaritifera</i> it would imply that they are unnecessarily stringent for all other receptors and physical situations.</p>

Submission Reference No.	Issues Identified	Response
		In these catchments derogations from the nitrogen application limit (170 kg/ha/yr) up to a maximum of (250 kg/ha/yr) in the Nitrates Directive (GAP) should, in NPWS' view, be subject to an appropriate assessment, as this is essentially licensing potentially damaging activities.
NS2_FPM_005	<p>Prioritise cross-compliance monitoring for 27 FPM catchments. Within the pearl mussel catchments, target farms in sensitive areas.</p> <p>The Department of Agriculture, Fisheries and Food (DAFF) carries out inspections in the context of Cross-Compliance for the purpose of the Single Payment Scheme (SPS). Under current legislation, 1% of farms in receipt of SPS payment are selected for inspection by DAFF using risk analysis. All farms selected are inspected for all relevant Statutory Management Requirements (SMRs), of which there are 19, including SMR5 regarding the conservation of natural habitats and of wild flora and fauna.</p> <p>The prioritisation of FPM catchments for inspection under cross-compliance would not be possible in the context of implementing the detailed rules for the implementation of Cross-Compliance set out in Commission Regulation (EC) No 796/2004 of 21 April 2004.</p>	<p>Comment noted.</p> <p>NPWS will continue to request that additional weighting is given to ensure sufficient inspections are carried out to improve cross compliance in <i>Margaritifera</i> catchments.</p>

Submission Reference No.	Issues Identified	Response
NS2_FPM_005	<p>The storage of sheep-dip on farms is inspected by the DAFF as part of Cross-Compliance under SMR9 regarding authorisation, placing on the market, use and control of plant protection and biocidal products; inspections also include checking records of pesticide use on farms.</p> <p>The Pesticide Control Service of the DAFF has carried out 4 national surveys of pesticide use on farms to date. Arrangements are being put in place for future surveys that are to become compulsory under a new EU Regulation requiring the collection of information on quantities of pesticide used.</p>	<p>Comment noted. Sheep dip facilities (plunge pools) have been identified as pressures in pearl mussel catchments where they are in close proximity to watercourses. Measures for such high risk activities will be provided in the final SBMP</p> <p>The results of these 4 national surveys of pesticide use on farms to date would provide an excellent baseline dataset for the freshwater pearl mussel catchments. A request for this information has been made to the DAFF.</p>
NS2_FPM_005	<p>The DAFF does not collect information on fertiliser use; slurry spread grounds and application rates. The provision of other data or maps could have significant resource implications for DAFF and/or require expertise that is not currently available in the Department.</p> <p>Please note also that individual farmer information regarding land use and LU/ha is subject to the requirements of the Data Protection Act, although the Nitrates Regulations provide that the Department may supply certain information to Local Authorities for the purposes of implementation of those Regulations.</p>	<p>Areas or riparian zones where detailed agricultural information is required could be prioritized within the 27 catchments in order to avoid overburdening DAFF. This information would greatly assist in developing more detailed and effective measures.</p>

Submission Reference No.	Issues Identified	Response
	REPS planner.	
NS2_FPM_005	Grazing animals should be fenced away from FPM habitat to prevent trampling of mussels. Suitable watering troughs should be provided. It is not clear if this is intended to be a notifiable action.	Entry of live stock or machinery to watercourses is already a notifiable action. The mechanism for the implementation of the fencing issue is subject to on-going discussion.
NS2_FPM_006	<p>The impact of the European Communities (Good Agricultural Practice for Protection of Waters) Regulations 2006 (hereafter referred to as the Nitrates Regulations) should be given an opportunity to work. They have been in place since 1st August 2006; however compliance with some measures, such as provision of required storage capacity, was not required until 31st December 2008. The additional storage capacity which has been constructed on farms in the past two years and the flexibility in landspreading which this will provide will have a significant impact on water quality in the future.</p> <p>If the Nitrates Regulations are adhered to by farmers it will minimise point discharges of effluents from farmyards and result in improved landspreading practices which will minimise diffuse field losses.</p>	<p>While it is recognised that GAP Regulations are likely to lead to general improvements in water quality, agriculture in many of these mussel catchments is in high risk situations. Unless GAP is designed to protect the most sensitive receptor in the highest risk physical situation (e.g. soils, slope, climate etc.) it will not be adequate to protect <i>Margaritifera</i>. Should it be argued that the GAP Regulations are adequate to meet all the standards necessary for the conservation of <i>Margaritifera</i> it would imply that they are unnecessarily stringent for all other receptors and physical situations.</p> <p>In these catchments derogations from the nitrogen application limit (170 kg/ha/yr) up to a maximum of (250 kg/ha/yr) in the Nitrates Directive (GAP) should, in NPWS' view, be subject to an appropriate assessment, as this is essentially licensing potentially damaging activities.</p>
NS2_FPM_006	<p><i>Prioritise cross compliance inspections for 27 pearl mussel catchments.</i></p> <p>The issue of responsibility for cross compliance inspection requires clarification due to ongoing discussions between the DAFF and DoEHLG.</p>	NPWS will continue to request that additional weighting is given to ensure sufficient inspections are carried out to improve cross compliance in the 27 <i>Margaritifera</i> catchments, under the framework agreed by DAFF and DEHLG
NS2_FPM_006	<p><i>Inspection of sheep dipping facilities.</i></p> <p>The Nitrates Regulations do not cover sheep dip & pesticide use so any actions taken by LA would have to be under Water Pollution Act, Dangerous Substances Regs., or Groundwater Directive.</p>	Sheep dip facilities (plunge pools) have been identified as pressures in pearl mussel catchments where they are in close proximity to the watercourses. Measures for such high risk activities will be provided in the final SBMP. Once the measure is included in the final plan it is required under the Habitats and Water Framework Directive and is,

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		therefore, subject to cross-compliance inspection under single farm payment scheme.
NS2_FPM_006	<p><i>Measures to reduce pressures at source;</i> In practice reductions/cessation of fertiliser on slurry use, ploughing, drainage, stocking rates, etc., over & above the limits imposed by Nitrates Regulations will be extremely difficult to implement & achieve unless there is a system in place to compensate for the losses incurred due to these reductions, such as special supplementary measures under REPS for example.</p>	NPWS accepts that the implementation of these measures is difficult and discussions on possible mechanisms is on-going. These measures will only be applied in those high risk areas where they are deemed necessary. Consequently a voluntary scheme may not be the most appropriate implementation mechanism.
NS2_FPM_006	<p><i>Measures to remediate pressures along the pathway;</i> These measures should be directed at controlling diffuse losses such as losses of nutrients & silt from lands, point source losses from farmyards should be controlled by better farmyard facilities & management.</p> <p>Again a system may be required to compensate for the losses incurred due to these measures, such as special supplementary measures under REPS for example.</p>	<p>Comment noted</p> <p>We agree ongoing efforts to reduce pressures from farmyards will help reduce losses, however, further remediation measures may be necessary to reduce nutrient and sediment losses to levels supportive of freshwater pearl mussel conservation.</p>
NS2_FPM_008	<p>The current Nitrates Regulations introduced in 2006 more than adequately represent farmers' contribution to the achievement of good water status and consequent maintenance of Freshwater Pearl Mussel population. In terms of the upcoming review of the National Action Programme established under these Regulations, we strongly believe that there should be only one set of regulations and inspections and that under no circumstances should any further supplementary measures be placed on the sector. Also, it is crucial that all bodies are cognisant of the period involved in achieving measurable benefits in</p>	<p>The Nitrates Regulations and GAP Regulations are basic measures as detailed in the RBMP. In some pearl mussel catchments, additional supplementary measures may be required and these will be identified in the sub-basin plans, including reasons why they are necessary.</p> <p>While it is recognised that GAP Regulations are likely to lead to general improvements in water quality, agriculture in many of these mussel catchments is in high risk situations. Unless GAP is designed to protect the most sensitive receptor in the highest risk physical situation (e.g. soils, slope, climate etc.) it will not be adequate to protect <i>Margaritifera</i>. Should it be argued that the GAP Regulations are adequate to meet all the standards necessary for the conservation of <i>Margaritifera</i> it would</p>

Submission Reference No.	Issues Identified	Response
	terms of the effectiveness of the National Action Programme.	imply that they are unnecessarily stringent for all other receptors and physical situations. In these catchments derogations from the nitrogen application limit (170 kg/ha/yr) up to a maximum of (250 kg/ha/yr) in the Nitrates Directive (GAP) should, in NPWS' view, be subject to an appropriate assessment, as this is essentially licensing potentially damaging activities. NPWS will continue to request that additional weighting is given to ensure sufficient inspections are carried out to improve cross compliance in the 27 <i>Margaritifera</i> catchments, under the framework agreed by DAFF and DEHLG
NS2_FPM_009	The issues of resources and funding would need to be addressed in relation to the measures set out in this (Agriculture) section. It would appear that some of the proposals contained therein could give rise to claims for compensation on behalf of affected landowners. In addition, there is still some uncertainty at present with regard to the carrying out of farm inspection activities. In particular, it is our understanding that discussions are on-going between the DoEHLG and DAFF with a view to identifying which agency should have responsibility for carrying out farm inspections for the purposes of assessing compliance with the Nitrates Regulations.	Comment noted NPWS will continue to request that additional weighting is given to ensure sufficient inspections are carried out to improve cross compliance in the 27 <i>Margaritifera</i> catchments, under the framework agreed by DAFF and DEHLG
NS2_FPM_009 NS2_FPM_027	Catchment Modelling – it is difficult to see what role, if any, local authorities might have in this area. LA's are expected to model nutrient, sediment and dangerous substances loads. There is great scope in this modelling of this nature but there must be a structure put in place for carrying this out in the form of training and resources for acquiring modelling software and supporting technologies. Projects of this type need full understanding and commitment from the management and end users where knowledge and application capabilities should be assessed. Use of	Comment noted NPWS are in agreement on the adoption of a standardised approach. Catchment modelling will require use of the datasets collected for and managed for the WFD. The objective of any catchment modelling is to identify potential sources and risks. In addition, other state bodies and public authorities including EPA, DAFF, NPWS, DEHLG are identified under this measures in the plan in Table 6.3

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	<p>modelling using GIS could be most beneficial but LA must be equipped with the correct software, capable hardware systems to run the model with access to datasets that can aid or are required to run the model. Often the datasets that are required are not in existence, and where data capture can be very costly, or if in existence they can be costly to attain, often under licence. Detail as to how the modelling can be developed across all LA needs to be addressed and a consistent and standardised approach taken with support and back up for all LAs. Such models could also be applied across all catchments under study not just the FWPM catchments but only if it is resourced, organised and supported properly.</p>	
NS2_FPM_010	<p>The Board have concerns regarding the proposal to use constructed wetlands on farms as to date approved standards have not been published by the Dept. of Agriculture, Fisheries and Food while research carried out by Teagasc into the treatment of farmyard dirty waters using constructed wetlands established poor retention of phosphorus.</p>	<p>Draft guidelines have been produced by DEHLG and any wetlands constructed as measures to reduce nutrient/silt loss must be in full compliance with the final guidance. NPWS agrees that there are questions in relation to the treatment of farmyard dirty waters using Integrated Constructed Wetlands that would need to be resolved prior to their uses for such purposes. NPWS envisage greater application of ICW for the treatment of nutrients/silt from less contaminated waters from diffuse sources. There may also be a role for ICWs as a polishing system post treatment by septic tank.</p>
NS2_FPM_016 NS2_FPM_017	<p>Permethrin products are used a sheep dip, a practice which poses huge risks to FPM in that one accidental spill or careless discharge could obliterate a FPM population. There needs to be further investigation in to the use, authorization, and discharge practices for permethrin products in agriculture, and regulation of practices that pose a significant threat, especially in this primarily pastoral sub catchment (Clodiagh catchment, and also in many other sub-catchments).</p>	<p>The only substances in sheep dip products approved for use in Ireland are amitraz, cypermethrin and diazinon. Some monitoring of all of these substances was conducted under WFD Dangerous Substances monitoring. Sheep dip facilities (plunge pools) have been identified as pressures in pearl mussel catchments where they are in close proximity to the watercourses. Measures for such high risk activities will be provided in the final SBMP. Once the measure is included in the final plan it is required under the Habitats and Water Framework Directive and is, therefore, subject to cross-compliance inspection under single farm payment scheme.</p>

Submission Reference No.	Issues Identified	Response
NS2_FPM_016 NS2_FPM_017	The measures proposed, under Plant Protection Products Directive' are not sufficient to protect FPM populations from the threat of permethrin and other toxic products, especially in combination as described in section 4.3.2. The measures are generic to Ireland and do not consider the higher sensitivity of the 27 sub-catchment (Clodiagh catchment mentioned in NS2_FPM_016).	Comment noted
NS2_FPM_016 NS2_FPM_017	In relation to the Nitrates Directive, granting derogations in this very sensitive catchment(s) is not compatible with FPM conservation, and as such this measure is inappropriately placed in the summary of measures.	<p>This comment refers to the Basic Measure of the Nitrates Directive which lists as one of it's actions the following 'Grant derogation from nitrogen application limit (170 kg/ha/yr) up to a maximum of 250 (kg/ha/yr) to applicant land owners where strict specified conditions are met. Carry out mini-catchments studies to demonstrate the effectiveness of the National Action Programme'.</p> <p>Derogations from the nitrogen application limit (170 kg/ha/yr) up to a maximum of (250 kg/ha/yr) in the Nitrates Directive (GAP) should, in NPWS' view, be subject to an appropriate assessment, as this is essentially licensing damaging activities.</p>
NS2_FPM_016 NS2_FPM_017	One measure that may be required to consider the impacts of agriculture described would be a special subsidized farm support scheme where landowners become positive contributors to the health of FPM population. Such a support scheme would encourage maintenance of soil structure to prevent siltation, buffer zones for silt and nutrients, nutrient management, and non toxic land management. This would be delivered through a combination of involvement in conservation measures, sensitive land management, promotion of high water quality and pride in pearl mussel populations, and financial incentives for positive land management.	<p>Comments noted:</p> <p>It should be acknowledged that a number of agri-environmental schemes including the NPWS Farm Plan Scheme are already in operation. As with the draft plans, the final plans will include measures to increase awareness and educate all stakeholders of freshwater pearl mussel and their conservation status.</p>

Submission Reference No.	Issues Identified	Response
NS2_FPM_022	A lot of these measures appear to be generic. Do we have specific detail on where measures identified in points 1 and 2 page 59 should be carried out on the Allow?	It is intended that the sub-basin plans will provide water body level specific measures and will detail the specific measures in Tables 6.1-6.3 which are applicable, plus any other measures identified as being necessary on the basis of 2009 catchment walkovers and pressures assessment and the results of biological element surveys, plus the results of revised 2009 interim status from the EPA.)
NS2_FPM_027	<p>The issues of resources and funding would need to be addressed in relation to the measures set out in this section (Agriculture). In addition if the Local Authority is responsible for implementation they would not be in a position to compensate for the implementation of a measure. It would appear that some of the proposals contained therein could give rise to claims for compensation on behalf of affected landowners. Even in cases where monetary compensation might not be sought, the minimum expectation of a landowner may be the provision of an alternative source of drinking water for cattle – which would put additional pressure on water sources, treatment plants and distribution networks.</p> <p>There is still some uncertainty at present with regard to the carrying out of farm inspection activities. In particular, it is our understanding that discussions are on-going between the DoEHLG and DAFF with a view to identifying which agency should have responsibility for carrying out farm inspections for the purposes of assessing compliance with the Nitrates Regulations. If the Nitrates Regulations are adhered to by farmers it will minimise point discharges and result in improved landspreading practices which will minimise diffuse field losses.</p> <p>There may be compensation claims from farmers if they are forced to fence watercourses and prevent access by livestock given extra cost incurred by them</p>	<p>Comments noted</p> <p>The methods of implementation of agricultural measures are subject to on-going discussions between DAFF and DEHLG</p> <p>NPWS will continue to request that additional weighting is given to ensure sufficient inspections are carried out to improve cross compliance in the 27 <i>Margaritifera</i> catchments, under the framework agreed by DAFF and DEHLG.</p> <p>While it is recognised that GAP Regulations are likely to lead to general improvements in water quality, agriculture in many of these mussel catchments is in high risk situations. Unless GAP is designed to protect the most sensitive receptor in the highest risk physical situation (e.g. soils, slope, climate etc.) it will not be adequate to protect <i>Margaritifera</i>. Should it be argued that the GAP Regulations are adequate to meet all the standards necessary for the conservation of <i>Margaritifera</i> it would imply that they are unnecessarily stringent for all other receptors and physical situations.</p>

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	<p>in providing wells, pumps, piping and troughs.</p> <p>In practice reductions/cessation of fertiliser or slurry use, ploughing, drainage, stocking rates, etc., over & above the limits imposed by Nitrates Regulations will be extremely difficult to implement & achieve unless there is a system in place to compensate for the losses incurred due to these reductions.</p>	<p>Derogations from the nitrogen application limit (170 kg/ha/yr) up to a maximum of (250 kg/ha/yr) in the Nitrates Directive (GAP) should, in NPWS' view, be subject to an appropriate assessment, as this is essentially licensing potentially damaging activities.</p>
NS2_FPM_027	<p>Cattle assess has been referred to as to being a significant and damaging activity. Currently cattle access is a practice that is allowed by the DAFF, with restrictions, for places where a piped supply is difficult. There must be a more definite approach taken to cattle access in catchments of FWPM. Either it is not permitted across the entire catchment or there is a structure policy towards it, i.e. allowed with restrictions in the smaller stream areas and not permitted in the main channel for example. In any event, there should be a resolve of ambiguity between what the landowner may be told by the LA in its role of managing FWPM catchments and what the DAFF is approving.</p>	<p>Entry of live stock or machinery to rivers/watercourses is an existing notifiable action. Measures to exclude livestock from identified stretches of these rivers will be included in the final plans. The mechanism for the implementation of the fencing measure is subject to on-going discussion.</p>
NS2_FPM_027	<p>Imposing measures such as the cessation of fertilisers, slurry, drainage works etc., reduction in livestock units, devalues the land as its uses are severely restricted and curtailed and can affect the livelihood of the landowner/farmer. Again the question of liability comes into question where compensation or legal actions may be brought to the LA. There is no detail in the plan as to the repercussions of their implementation.</p>	<p>Comments noted</p> <p>The possible methods for the implementation of agricultural measures are subject to on-going discussions between DAFF and DEHLG</p>
NS2_FPM_032	<p>IFA proposes that additional measures must not be imposed on the farming community until the reasons for FPM failing to reproduce are identified. IFA propose that detailed research is conducted to</p>	<p>The reasons for the failure of pearl mussels recruitment is well researched and documented and is presented in the Sub-basin management plans. Measures will only be implemented at those sites where investigation and risk assessment show that specific pressures</p>

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	evaluate the social, economic and environmental cost of implementing the land sterilisation measures proposed, in advance of their implementation.	need to be remediated to restore the pearl mussels to favourable conservation status. All measures will be subject to cost effective analysis prior to implementation. Where impacts have been documented, measures must be taken unless a sector can prove that its activities are not a contributory cause to the decline of pearl mussels.

3.1.5 Wastewater from unsewered properties

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NS2_FPM_003 NS2_FPM_004 NS2_FPM_007	Use of constructed wetlands for treating/polishing household effluent from unsewered properties. Suggest removing the word “treated” as ICWs have been accepted as polishing filters only. The EPA, interagency and interdepartmental position is that constructed wetlands are normally not considered appropriate as a primary or secondary treatment methodology, but rather as a polishing process. (include ref. to EPA guidelines)	Draft guidelines have been produced by DEHLG and any wetlands constructed as measures to reduce nutrient/silt loss must be in full compliance of the final guidance. There may be a role for Integrated Constructed Wetlands as a polishing system post treatment by septic tank in hydrological settings which do not allow the effluent to be discharged to ground.
NS2_FPM_010	Of concern to the Board is the proposal to use constructed wetlands for treating / polishing household effluent from unsewered properties. The Board have concerns relating to the “storage” of P in such wetlands and the potential for releases of “stored” Phosphorus. Given that there is a requirement to return the Derreen to reference conditions it is imperative that where waste water treatment systems are being upgraded only reliable & proven systems be installed at these sites.	
NS2_FPM_006	Cork County Council has a concern regarding the use of constructed wetlands to treat / polish the effluent from one-off domestic properties. Recent research has shown that these systems are not effective over extended periods. (<i>Evaluation of the</i>	Draft guidelines have been produced by DEHLG and any wetlands constructed as measures to reduce nutrient/silt loss must be in full compliance with the final guidelines. The DEHLG Wetlands steering group who are overseeing the production of the guidelines are currently investigating the seasonal performance of ICWs. There may be a role for

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	<p><i>Waste Treatment Performance of Constructed Wetlands with special reference to Williamstown Co. Galway Wetland System)</i></p> <p>Percentage of nitrate retention is temperature / season dependant. In the winter, not only are nitrates not reduced, some of the nitrates stored in the wetlands during other seasons are released. The reduction of phosphorus by the wetland system is poor having an average reduction rate of 13% for Total Phosphorus and 26% for Ortho-Phosphorus. The average summer and winter reductions are 27% and -1% respectively for total Phosphorus and 32% and 22% respectively for Ortho-Phosphorus.</p> <p>A paper (<i>A Farm-Scale Integrated Constructed Wetland to Treat Farmyard Dirty Water</i>) showed that the percentage of phosphorus retention is season dependant. In the winter a figure of 5% retention was demonstrated.</p> <p>While it is noted that that “implementation of these measures will only occur at the specific sites where they are required”, constructed wetlands may have a function as tertiary treatment in polishing the final effluent, but if nitrogen and phosphorous are factors to consider in relation to the health of the mussels, perhaps not the most suitable treatment system to specify.</p>	<p>Integrated Constructed Wetlands as a polishing system post treatment by septic tank in hydrological settings which do allow the effluent to be discharged to ground.</p> <p>The Williamstown system is not equivalent to the Integrated Constructed Wetlands provided for in the draft DEHLG guidance and SBMP.</p> <p>Comment noted</p>
NS2_FPM_006	<p><i>Housing and development</i></p> <p>“Identify areas where further development represents a significant risk to pearl mussel conservation and implement development restrictions as necessary”.</p> <p>It is not clear what support or guidance will be</p>	<p>This measure includes development served by both municipal wastewater treatment plants and on-site wastewater treatment systems. General risk mapping has been prepared under the WFD Onsite wastewater treatment project based on bedrock aquifer type, subsoil type and permeability http://www.wfdireland.ie/docs/23_UnseweredWasteWaterTreatmentSystems/(Treatment Systems/). Risk maps for pathogens and phosphorus loss to both groundwater and surface waters have been prepared. A risk map of the</p>

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	provided to the local authorities to assist with this requirement. If development is too restrictive or onerous treatment limits are required for discharges this may promote development beyond municipal wastewater treatment plants and encourage the further development of on-site wastewater treatment systems in less favourable areas.	likelihood of inadequate percolation occurring has also been prepared. This risk mapping has been provided to the Local Authorities in GIS format. These maps give a general indication of the risk level of locating oswwts within the county. Where the risk area is high due to the pathway considerations then very detailed site investigation to approve an application is required. In addition the location of onsite systems has been plotted onto the mapping using the An Post GeoDirectory. This identifies clusters of oswwts which may be on inappropriate settings and monitoring at these locations is required to confirm this and determine what remedial actions are necessary.
NS2_FPM_009	The question of resources needs to be addressed. In particular in relation to the carrying out of surveys and for any follow up actions required.	Comment noted
NS2_FPM_016 NS2_FPM_017	Clodiagh catchment In relation to the problems posed by septic tanks to the water quality (Clodiagh catchment mentioned in NS2_FPM_016, but all catchments applicable in NS2_FPM_017), again there are no adequate specific measures proposed to halt the continuation of this problem. One specific measure, in place in Cavan County Council, has been innovative in it's approach to this problem. It has introduced the 'Water Pollution Waste Water treatment Systems for single houses By-Laws 2004', which requires all existing systems to be inspected and registered by 31 December, 2005. They must be de-sludged according to a table (averaging once every 2 years) and this must be recorded. This record and the installation must be recertified after 7 years. These By-laws are unique in Ireland, and should be introduced in this catchment as part of the Management Plan.	The RBMP and Table 6.2 of the Sub basin management plans contain specific measures for the inspection of on-site waste water treatment systems and the requirement for percolation and de-sludging. In addition the sub-basin management plans contain specific requirements that inspections of all on-site waste water treatment systems in the pearl mussel catchments will be carried out. It is the prerogative of each Local Authority to decide if it wishes to enact Bye-laws to implement measures. The Water Pollution Act and Building Regulations may also be applied.
NS2_FPM_022	On site waste water treatment systems – Are there specific actions being carried out to implement the	The implementation of the RBMP and SBMP plans will begin in 2010. The

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	measures required of local authorities for the Allow?	relevant Local Authority may already be taking measures in relation to on-site waste water treatment systems and should be contacted for further information.
NS2_FPM_027	Clare County Council has concerns regarding the requirements in relation to septic tanks. The area of the Cloon river has gley type soils and many existing septic tanks. There are significant risks that new proposed septic tanks may not pass the acceptable criteria under the new EPA guidance on septic tanks and the requirements in this section in respect of upgrading of existing tanks may prove to be socially unacceptable with very serious implications for house owners and the LA.	Proposed Measures allow discharge to groundwater only where percolation risk assessment and adequate attenuation allows. If the soil/groundwater is unsuitable due to inadequate drainage capacity, particular design solutions may be required. This could include proprietary treatment systems and integrated constructed wetlands as a polishing filter.
NS2_FPM_027	In the Cloon catchment there has yet to be an assessment of the level or state of unsewered properties. The measures have suggested that where problems exist, and are such that they require upgrading or installation of a more adequate system that enforcement is used under the Water Pollution Act by means of a Section 12 Notice. There may be difficulties with this for the foreseeable future with the current economic situation and will prove very difficult to make any progress without a government funded grant aided support structure in place.	Comments noted The final plans will identify and prioritise the area for inspections for up-grade.

3.1.6 Forestry

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NS2_FPM_014	Laois County Council has no involvement in the operation or management of afforested areas. It therefore considers that it is reasonable to seek derogations in a number of sub catchments as the	Part of the Nore pearl mussel catchment lies within County Laois and is also a sub-basin plan of the main South Eastern River Basin Management Plan. Through the RBMP and pearl mussel sub-basin management plan the Council should ensure that forestry is managed in

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	Council has no control over the management of these afforested areas.	<p>accordance with the measures set out therein. Laois County Council, through the River Basin District may also be requested to review any application for aerial fertilization related to forestry under the European Communities (Aerial Fertilisation) (Forestry) Regulations 2006, S.I. 592 of 2006 in respect of sensitive areas. In addition forests and forestry activity come under the control of the Local Government Water Pollution Act 1997 and as amended</p> <p>Forestry is also regulated by the Forest Service of the Department of Agriculture, Fisheries and Food. The Forest Service is actively involved in the National Conservation Working Group. Forestry measures will be required in the target areas identified in the final plans</p>
NS2_FPM_016 NS2_FPM_017	<p>Clodiagh catchment. Also applicable to all catchments (between *'s)</p> <p>*The draft plan appropriately acknowledges the extent of the threat of forestry operations to FPM habitats and populations*, and that 6.2 % of the sub-catchment is comprised of 'coniferous forests'. *However the measures proposed do not address most of threats identified in the descriptive section of the plan. The measures are thus clearly insufficient to address the risks posed by forestry to future viability of the FPM in this catchment.*</p>	<p>The identification and extent of pressures as detailed in the <i>draft</i> freshwater pearl mussel plans was largely a desk based assessment making best available use of GIS datasets and background data. The 2009 field work programme is aimed at verifying the pressures which were identified in the <i>draft</i> plans together with identifying additional areas of significant pressure within the catchment. Specific pressures and measures will be identified in the finalized plans based on the comprehensive field work programme.</p> <p>The forestry measures in Table 6.3 represent a very comprehensive toolkit of measures that can be applied to target forestry related pressures. NPWS would welcome submissions on specific additional tools.</p>
NS2_FPM_016 NS2_FPM_017	<p>In the Summary of Measures, Table 6.1, Under 'Birds and Habitats Directives', the second point, relating to ensuring appropriate assessments are carried out before granting licences, the Forest Service is absent from the 'who leads' column. It is essential that the Forest Service become fully compliant with Article 6 of the Habitats Directive. In doing so the Forest Service (part of DAFF) must ensure that no damage occurs to the habitats and populations of FPM's through granting of licences for afforestation, felling licences, forest road</p>	<p>.</p> <p>Comments noted.</p> <p>The forestry management plans that are measures in the SBMPs will require a Habitats Directive Article 6 Appropriate Assessment. There have been on-going discussions between NPWS and the Forest Service in relation to this.</p>

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	<p>approvals. It is with these licences that the Forest Service approves species mixes, use of pesticides and fertilisers, lays conditions for sediment traps and buffer zones, and approves planting regimes which dictate future management options, and thus the granting of these licences also comes under the requirements of the Habitats Directive and should appear alongside Local Authorities, the EPA, and An Bord Pleanala.</p>	
<p>NS2_FPM_016 NS2_FPM_017</p>	<p>Clodiagh catchment. Also applicable to all catchments (between *'s) *Under the EIA measures, the Forest Service should also be identified. This is because the FS determines when a 'sub-threshold' development requires an EIA, such as a forest road in a particularly sensitive catchment* such as the Clodiagh.</p>	<p>Noted: The relevant legislation is as follows: European Communities (Environmental Impact Assessment) (Forestry Consent System) (Amendment) Regulations 2006 (S.I. No. 168 of 2006) The European Communities (Environmental Impact Assessment) (Amendment) Regulations, 2001 (S.I. No. 538 of 2001) introduced the Forest Consent System.</p> <p>The Forest Consent System is a statutory approval and environmental screening procedure for initial afforestation and its introduction coincided with initial afforestation being taken out of the planning control system by virtue of the Local Government (Planning and Development) (Amendment) Regulations, 2001 (S.I. No. 539 of 2001).</p> <p>The Forest Consent System provides for a mandatory environmental impact assessment (EIA) in respect of all afforestation developments in excess of 50 hectares and provides for the possibility of a sub-threshold EIA where a project is likely to have significant effects on the environment.</p> <p>Under the Forest Consent System, the approval of the Minister for Agriculture, Fisheries and Food is required in respect of afforestation. All applications for approval to afforest are subjected to an environmental screening procedure in order to assess the potential environmental impact of the proposed development. The environmental screening procedure examines the potential impact of the proposed afforestation development across a range of factors including, water</p>

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		<p>quality, designated habitats, archaeology, landscape or other environmental considerations. Where it appears that a proposed afforestation development might have significant environmental impact, the Minister must consult with the appropriate prescribed body and may also undertake public consultation, before a decision is made to approve or refuse approval for the proposed development.</p>
<p>NS2_FPM_016 NS2_FPM_017</p>	<p>The measures proposed for forestry under ‘Point Source and Diffuse Source Discharges’ are very limited in their scope. To “promote forestry” is not a measure for the conservation of the FPM and is as such inappropriately located in this table. Also the word sustainable in this context implicitly suggests balancing of social, economic, and environmental considerations, thus the wording “encourage sustainable, commercial, afforestation” is inappropriate for such a plan.</p>	<p>The submission apparently refers only to measures outlined in Table 6.1, and does not take into account the very detailed tool-kits of forestry measures contained within Tables 6.2 and 6.3. The proposed forestry measures in Table 6.2 were identified by a Working Group comprising experts from Forest Service, Coillte Teoranta, COFORD, NPWS, EPA, Fisheries, Local Authorities, RBD Consultants and International Experts and Academics. The measures identified were supported by research undertaken by UCD and UCC as part of the measures development and establishment of cause and effect (http://www.wfdireland.ie/docs/22_ForestAndWater/).</p> <p>The measures were designed to be regarded as a suite of measures the most appropriate of which would be selected on a site specific basis. The Working Group recognised that some of the proposed measures would require to be trialled out at a catchment scale to determine their effectiveness. Some further research is being undertaken under the HYDROFOR Project (www.ucd.ie/hydrofor)</p> <p>The measures identified in Table 6.3 were based on the need to address the existing situation on the ground in pearl mussel catchments realising that forestry as a land use exists within the catchment and that practical measures to address its management are required.</p> <p>It is also important to note that forestry, in particular riparian woodland, is a potential measures for remediating the loss of diffuse nutrients from land.</p>
<p>NS2_FPM_016 NS2_FPM_017</p>	<p>Clodiagh catchment. Also applicable to all catchments (between *’s) *The use of permethrin is identified as a significant contributor to the decline of FPM in section 1.3.1.4 ‘Declines in Pearl Mussel Populations as a result of</p>	<p>Cypermethrin is currently used in the forest sector to control pine weevil infestation and damage to replanted areas post clearfelling. It is a registered insecticide controlled by the Pesticide Control Service of the Department of Agriculture, Fisheries and Food. Under the Forest Stewardship Council Coillte have received a derogation to continue its</p>

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	<p>Toxic Pollution'. The use of cypermethrin is again listed as one of the main pressures in section 4.3.1 under 'Main pressures from forestry in the* Clodiagh *Catchment'. However, there are no proposed measures to address this specific threat. One such measure that must be included to address this threat is that DAFF must discontinue authorisation of the use of cypermethrin in Ireland. In the UK the use of specific cypermethrin products were suspended in 2006, and it is listed as a "priority substance" for action under the Water Framework Directive there. Cypermethrin is also deemed sufficiently toxic for the FSC to ban it from their list of permitted chemicals in sustainable forest practices. Coillte currently have a derogation from FSC international, valid until 2011, to use cypermethrin. According to FSC International a second period of derogation is not normally considered. This sets a context for discontinuing cypermethrin use in forestry Ireland.*</p>	<p>use in Irish Forestry until 2011. The proposed measures to reduce and phase out the use of pesticides included in the pearl mussel sub-basin management plans for forestry include: delaying any restocking by 3-5 years. That is allowing any clearfelled site to remain fallow to reduce the pine weevil population naturally using pre-dipped plants from nurseries to avoid the need for spray application in-situ and developing alternate biological control methods. Biological control methods to control the pine weevil being evaluated to determine the effectiveness of this approach.</p>
<p>NS2_FPM_016 NS2_FPM_017</p>	<p>Nutrient enrichment from ground and aerial fertilization are identified in section 4.3.1, yet the proposed measures only address aerial fertilization. A readily applicable additional measure which is currently missing is that no further fertilization will be authorized in the Clodiagh catchment (or in any of the 27 sub-basin catchments) as part of any license granted by the Forest Service. The measure to grant aerial fertilisation licenses with conditions needs instead to be that no aerial fertilization may occur, as this form of fertilizer application is particularly non specific in its targeting, inefficient in its take up by trees, and extremely difficult to prevent spray drift into small waterways and headwaters of this sensitive catchment ecology. In relation to granting aerial fertilisation licences, the third point, the list of authorities to be notified if a proposed application might have a</p>	<p>The requirement for fertilizer application occurs principally when forest stands are been established on nutrient poor soils such as peat soils and when a subsequent need for fertiliser application is identified through pine needle analysis of an existing crop. At establishment phase fertilizer can be applied either mechanically or by hand. During the growth phase fertilizer is generally applied by aerial fertilization. The approach taken in the suite of measures in Tables 6.2 and 6.3 is to avoid the need for fertilization where possible and to ensure where fertilization is allowed it is carried out strictly in accordance with the legislation and based on a risk assessment. A number of measures have been included in the pearl mussel plans which aim to avoid afforestation and reforestation on nutrient poor sites such as Blanket Peats, Raised Bogs, Fen Peats and heaths which have poor nutrient retentive capacity.</p> <p>The application of fertiliser to forest stands needs to be assessed on a site specific basis and a risk assessment of nutrient loss to waters made. The measures set out allow for the prohibition of fertilizer application where</p>

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	<p>significant effect on water quality should include the National Parks and Wildlife Service, as water quality here has a remit of habitat quality and favourable conservation status of the FPM.</p>	<p>it cannot be demonstrated that such application will not have a negative impact on the pearl mussel populations (Table 6.3 includes a measure “for prohibition of fertilisation on sensitive areas”). Aerial fertilization is controlled under the European Communities (Aerial Fertilisation) (Forestry Regulations) of 2006.</p> <p>In relation to Consultation with regard to Aerial Fertilisation Section 7 (1) (b) of the Regulations clearly states that the Minister must notify the Minister for Environment, Heritage and Local Government of an application for a license</p> <p><i>if it appears to the Minister that the proposed application might have significant effects in relation to nature conservation,</i></p> <p>Specific Forest Management Plans must be drawn up for all forests and forestry within the pearl mussel catchment. These plans must be developed with key stakeholders to address the significant pressures identified through an appropriate assessment. The plans will recognise that site specific measures for forest stands within the pearl mussel catchment are required and will identify to the extent possible the most appropriate measures for each site from the suite of measures set out in the plans. The plans may identify that no fertiliser application should be allowed.</p>
<p>NS2_FPM_016 NS2_FPM_017</p>	<p>An Taisce propose that given the extent of the current threat posed by forestry sector in this sub catchment (and in some other sub-catchments), and the lack of reproductive success in the FPM populations in this sub catchment (and in some other sub-catchments), that no further application of fertilizers, whether aerial or manual application, be permitted in this sub catchment (and in some other sub-catchments). There are no measures to address the significant problem of sedimentation, despite this being identified as a main pressure from forestry (specifically mentions the Clodiagh catchment as an example). Water quality guidelines are 9 years old and are not sufficient to protect sensitive watercourses from sedimentation during drainage for afforestation. In addition, a set of</p>	<p>Specific Forest Management Plans must be drawn up for all forests and forestry within the pearl mussel catchment. These plans must be developed with key stakeholders to address the significant pressures identified through an appropriate assessment. The plans will recognise that site specific measures for forest stands within the pearl mussel catchment are required and will identify to the extent possible the most appropriate measures for each site from the suite of measures set out in the plans. The plans may identify that no fertiliser application should be allowed. It should be noted that only aerial fertilisation is regulated at present by the Forest Service.</p> <p>Detailed measures in relation to forestry fertilisation are included in the Table 6.3 and measure for the mitigation of nutrient loss included in Table 6.2. There are specific measures that address eutrophication and sedimentation from forestry activities in Table 6.1, 6.2 and 6.3 in the</p>

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	measures are required to prevent nutrient enrichment from forestry planted before the guidelines were brought in. This threat is presented in section 4 of the plan but no related measures are proposed, leaving this threat to continue.	draft plans. Specific targeted forestry measures will be included in the final SBMPs and the Forestry Management plans. Specific measures to limit sedimentation have been set out in the pearl mussel plans. These include measures to limit felling coupe size to limit areas where sediment can be generated, auditing and curtailment of existing drainage networks to ensure no direct connectivity to water courses, establishment of appropriately sized vegetative buffer zones prior to any clearfelling and improving the design and distribution and management of sediment traps and sediment control blankets.
NS2_FPM_022	Is forestry considered a problem on the Allow?	This will be elucidated in the final plan. Forest areas in the upper Allow catchment include forest stands that were planted prior to 1990. These stands were planted without the benefit of the Forest Service Guidance documents and as such the drainage network associated with them would be directly connected to the main watercourses. Additionally, trees would have been planted right down to the watercourses themselves. No buffer zones exist in these areas. There is therefore a high risk that forestry activities which generate sediment and nutrient at thinning and harvest time would result in nutrient and sediment load loss to the river systems. Sediment and nutrient are key pressures impacting on the pearl mussel populations. Forest stands in the Allow catchment must therefore be considered to constitute some risk to the pearl mussel populations.
NS2_FPM_022	Why is it considered necessary to “establish a continuous cover of native bank side trees at mussel habitat locations to produce dappled shade with no tunnelling of the river”.	This is one of a large suite of options. It is not considered obligatory but is seen as a positive benefit to the mussel population in providing refuge during warm weather periods.
NS2_FPM_022	Why should trees at risk of falling in the river be removed? Is this not a natural process?	A fallen branch or tree could, through direct impact or habitat alteration/sediment trapping, cause very significant mussel mortalities. This a particular concern where adult mussel populations have declined and where mussels are distributed along the bank sides.
NS2_FPM_022	Also is tunnelling by vegetation considered to be a problem for pearl mussel and if so why?	Dense cover by native deciduous trees is not a significant concern for pearl mussel populations however, tunnelling / shading by coniferous species can impact negatively on mussel feeding rates with consequent

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		impacts on reproduction. Extensive shading due to tunnelling can lead to reduced fish abundance as food supply may be limited. If this occurs near natural gravel areas suitable for pearl mussel colonization then fish may avoid the area reducing the possibility of such colonization taking place. Areas where tunnelling is an issue will be identified during field survey investigation.
NS2_FPM_024 NS2_FPM_030 NS2_FPM_032 NS2_FPM_033	IFA request a meeting with all forestry stakeholders to discuss in detail all submissions prior to completing RBMPs to coordinate the implementation of the Water Framework Directive and Habitats Directive (Freshwater Pearl Mussel) in the forest sector.	Request for a meeting will be passed to the forestry stakeholders.
NS2_FPM_025	We think the draft plan seriously underestimates the impact of siltation caused by overgrazing (p.28) and afforestation in the catchment.	The identification and extent of pressures as detailed in the <i>draft</i> freshwater pearl mussel plans was largely a desk based assessment making best available use of GIS datasets and background data. The 2009 field work programme is aimed at verifying the pressures which were identified in the <i>draft</i> plans together with identifying additional areas of significant pressure within the catchment.
NS2_FPM_025	To our knowledge, there has never been any aerial fertilisation of the conifer plantings and we would be most agitated were there to be any such activity (p.27).	Chapter 4,section 4.3.1, page 27 of the Bundorragha plan is a generic paragraph which was used throughout the 27 catchment plans to demonstrate the various pressures which may occur from forestry. This chapter will be revised for the final plan with more catchment specific information.
NS2_FPM_027	One of the measures is the development of forestry management plans, which should prove effective. However one concern is their enforcement and the danger of non-collaborative approach between bodies in their final approval. The lead body is the DAFF but there should be consultations for all plans with the local authority, fisheries, NPWS, FWPM project group, etc so that issues are not missed. Also, as it is the Forest Service that regulates and monitors provisions under these forest management plans and indeed other issues relating to forestry control, with	As part of the implementation of the pearl mussel sub-basin Plans river Basin district Conservation groups will be established in each river basin district. These will comprise representatives of the key stakeholder organizations including representatives of NPWS, the lead Local Authority (acting on behalf of all the basin authorities), Regional Fisheries Boards and the Forest Service and others. This will assist with adequate consultation with all stakeholders on any Forest Management Plans for pearl mussel catchments. The production of the forestry management plans will require the involvement of all relevant public authorities and stakeholders. It is

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	<p>respect to the Forest Service and speaking as a public body ourselves, are there adequate staff resources within the Forest Service to do this to a satisfactory level? This is more of an issue in catchments with FWPM, as the documents states that even one event could be significant enough to have far reaching ramifications for the FWPM, this would indicate the need for a much more rigid and tightly policed level of enforcement.</p> <p>The measures proposed of not felling or refusing future planting after a felling may have liability implications for the local authority for strongly objecting to a felling or strongly objecting to replanting. There is no reference or indication as to any studies as to how this measure could be imposed without the issue of liability or what the real implications are. Indeed this measure for the moment does not seem viable at all.</p> <p>The suggested measures address the particulars of how to go about achieving a minimal impact forestry arrangement and these would be applied through out the entire catchment. However, for those sites that are literally lying adjacent to main channels on soils of peat, where there are afforestation applications, the plan doesn't clearly indicate how to treat such applications. Are they still to be considered for permission on the basis that all measures will be followed by the landowner or does the plan suggest that applications on these sites are disallowed on the basis of proximity to the FWPM sites and potential for sedimentation, and, fertilizer and chemicals impacting the beds. In effect should the LA be devising structured policies within these catchments where all criteria must be ticked for them to be not permitted to carry out a certain activity? This comes back to the idea of buffer areas from FWPM beds and the distribution of feeder streams that join the main channel. There should be a</p>	<p>envisaged that the forest management plan will include all forestry, public and private with the potential to impact positively and/or negatively on the water quality and freshwater pearl mussel and will also include all stages of the forest cycle. The Forest Management Plans will also be subject to appropriate assessment as they comprise plans with the potential to impact on cSAC areas under the Habitats Directive.</p> <p>The main pressures identified in the Forest and Water Studies come from older forest stands and from forestry activities such as roading, thinning and harvesting. These forests are, in the main, managed by Coillte on behalf of the State. The liabilities associated with issues of not replanting or abandoning forestry will reside largely with the state sector and the cost effectiveness of these measures will also be examined. Cases may arise where compensation to landowners may be necessary. The measures will be site specific and the benefit of implementing them will be fully examined before a final decision is made. In this sense the measures are practical and fully implementable.</p> <p>The pressure posed by forestry largely stems from the older legacy forests planted prior to 1990. Since the early 1990's the Forest Service began introduction of Guidance documents and codes of practice relating to forestry management. Forest stands planted after the introduction of these documents pose significantly less of a threat. For example buffer zones are now required for afforestation as well as better drainage management and discontinuity between the forest stand drainage system and the main watercourses. Mixed multiyear plantations are now more normal than the large monoculture forest stands of 40 years ago.</p> <p>The Forest and Water studies identified that forest stands on peat soils such as Blanket Bog, Fen Peats, Raised Bog and heaths posed significant threat of nutrient enrichment and sediment loss. These identified threats on specific soil types will be taken into consideration with other factors, such as slope for example, in assessing new applications for afforestation. The final sub basin management plans will attempt to make recommendations for afforestation by identifying areas which are not suitable for forestry and to be included in the forest management</p>

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	consistent approach across all catchments that have FWPM, in this regard.	plans. Through the RBMP and pearl mussel sub-basin management plan the Council should ensure that forestry is managed in accordance with the measures set out therein. Clare County Council, through the River Basin District may also be requested to review any application for aerial fertilization related to forestry under the European Communities (Aerial Fertilisation) (Forestry) Regulations 2006, S.I. 592 of 2006 in respect of sensitive areas. In addition forests and forestry activity come under the control of the Local Government Water Pollution Act 1997 and as amended. Forestry is also regulated by the Forest Service of the Department of Agriculture, Fisheries and Food. The Forest Service issues felling licences with associated conditions for replanting.
NS2_FPM_028	There are the well known pollution causes associated with large planting of forests and later decaying of trimmings left on ground after culling and total clearing of forests. The river basin has huge plantation of forests.	The pressures and potential impacts associated with forest and forestry activities on water quality and status have been well documented in the WFD study on Forest and Water (http://www.wfdireland.ie/docs/22_ForestAndWater/). The study was steered by a Working Group comprising experts from Forest Service, Coillte Teoranta, COFORD, NPWS, EPA, Fisheries, Local Authorities, RBD Consultants and International Experts and Academics. The Group identified the key issues and also identified the most appropriate measures to address the pressures identified. The measures identified were supported by research undertaken by UCD and UCC as part of the measures development and establishment of cause and effect. These measures have been included in the pearl mussel plans. The Working Group recognised that some of the proposed measures would require to be trialled at a catchment scale to determine their effectiveness. Some further research is being undertaken under the HYDROFOR Project which will lead to the modification of some measures. (http://www.ucd.ie/hydrofor/)
NS2_FPM_018	S2: Acidification –Avoid of limit (to below critical thresholds) afforestation on 1st and 2nd order stream catchments in acid sensitive catchments Coillte would have serious reservations on the wholesale blanket restriction of forest cover on 1st	Response S2. Acidification arises from the physical presence of acidifying tree species on acid geology. The extent to which it occurs depends also on atmospheric air pollution which can be localised (e.g. ammonia arising from slurry spreading from farms). The recent research has indicated that above certain forest cover threshold levels within

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	<p>and 2nd order streams in acid sensitive catchments. This would not only entail the deforestation of up to 12,000 hectares of existing forest but prevent the planting of more than 350,000 hectares to meet the Government's target of 17% forest cover. With the strict adoption of Water Protection Guidelines since the 1990, Coillte would strongly contend that current best forest and planting practices would not pose the same risk to water quality as what might have been the case prior to the Guidelines.</p>	<p>catchments on certain acid geologies, impact on ecology is observed and pH levels are lowered (http://www.wfdireland.ie/docs/22_ForestAndWater/Forestry%20and%20Surface%20Water%20Acidification-FORWATER.pdf). Below this threshold no significant impact was detected. The extent to which this impact extends downstream from the forest plot area is unknown and is the subject of further research (HYDROFOR Project, http://www.ucd.ie/hydrofor/contact). It was recommended in the report that although the likelihood of impact occurring above the threshold levels in the 1st and 2nd Order stream catchments would be high, a decision on whether to allow afforestation should take into account the downstream impact in the 3rd Order river system. The impacts on the ecology of the 1st and 2nd order streams, e.g. trout spawning, must also be considered. Conversely the study suggests that planting up to the threshold level may not give rise to adverse effects but this needs to be demonstrated.</p> <p>The effectiveness of the Water Protection Guidelines is very much dependent on the quality of chemical data related to buffering capacity. Ideally measurement of alkalinity should be undertaken at high flow periods or as suggested by the research if a minimum of 12mg/l as CaCO₃ was detected during normal flows then it would be unlikely that the buffering capacity would be exceeded. A revision of the Acidification Protocol is needed to reflect this.</p>
NS2_FPM_018	<p>S3: Acidification – Revision of Acidification Protocol</p> <p>The proposed revision of the Acidification Protocol to ensure actual minimum alkalinities are detected does not go far enough to adequately address the complex interaction between anthropogenic pollution and forest cover on acid sensitive geology. Only by properly measuring the levels of pollution, combined with determining the acid sensitivity of the receiving waters can the most appropriate decision be made on the tolerable limit of forest cover in a sensitive catchment.</p>	<p>It is acknowledged that anthropogenic pollution should be taken into consideration in determining likely potential impact of acidification in a particular location. However, the requirement to revise the Acidification Protocol is focused largely on the pathway for acidification to occur rather than the pressure. The pathway relates to the extent of tree cover and acid nature of the underlying subsoil and bedrock. Alkalinity is the simplest test that is available relating to the buffering capacity of the subsoil and bedrock in the area where testing is carried out. Base cation analysis can also be undertaken but is more costly. Alkalinity and base cations are related to the largely unchanging physical nature of the catchment geology and provide a measure of its buffering capacity independent of air quality pressure. By contrast air quality can vary considerably and may be difficult to predict. Given the long crop</p>

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		rotation period of commercial forestry (40 years for Coniferous and up to 80 years for deciduous) it would be difficult to predict future air quality but buffering capacity would at least be known. Recent research has indicated that a lower limit of 12 mg/l as CaCO ₃ , under normal flow conditions, would guarantee no acidification effects but below this level, periodic pulses of acid water could be expected during high water flow periods (http://www.wfdireland.ie/docs/22_ForestAndWater/). The acid pulse duration may be the critical factor in impact on ecology. Taking the Precautionary Principle Approach “safe” threshold levels that are relatively easily determined need to be built in to a new Acidification Protocol unless further research indicates otherwise.
NS2_FPM_018	<p>S4: Eutrophication and sedimentation – Avoid or limit forest cover on peat sites</p> <p>This measure is very general and does not make a crucial distinction between the highly sensitive unenclosed peatland, including Blanket Bog, Raised Bog, Fen peat and heathland), and less sensitive cutaway, enclosed and improved peats. The latter soil type has an excellent potential for forest growth with minimal impact on water quality subject to strict adherence to the current Forest Service Guidelines. If the above measure was implemented as currently drafted, approximately 70,000 hectares of forest planted prior to the 1990 Guidelines would be deforested resulting in significant ecological and carbon sequestration impacts.</p>	<p>While the risks of nutrient and sediment loss from forestry on cutaway, enclosed and improved peats may, in some situations, be less than from forestry on unenclosed peatland, those risks will need to be assessed on a site by site basis. A site that was previously drained (e.g. for agriculture) and is in direct connectivity with a river may be more difficult to remediate and present a much greater risk to WFD objectives than an undrained peat site. A proposed rewording of the measure is:</p> <p>“Avoid forest cover on unenclosed peatland sites (Blanket Bog, Raised Bog, Fen Peat and heath land) and limit forest cover on peatland sites such as cutaway, enclosed and improved peats. The latter should be based on a site by site assessment.”</p> <p>It is acknowledged that the legacy forests, planted prior to 1990 pose the greatest challenge to water quality – particularly at thinning and harvest times. A suite of measures to mitigate against potential impact have been proposed the selection of which will be very site specific. If these measures are successfully implemented it would demonstrate the possibility of continuing to utilise existing forest stand locations for replanting.</p>
NS2_FPM_018	<p>S5: Eutrophication and Sedimentation – Change tree species mix (e.g. broadleaves) on replanting</p> <p>Again, this measure is exceedingly general and is applicable to all soil/site types as currently drafted. The adoption of such a broad measure across the national forest estate and the forests in the WRBD in particular</p>	<p>This measure was intended to be one of a suite of options for forests that are high risk in terms of nutrient and/or sediment loss. This measure should be chosen for sites where it will appropriately remediate these pressures and minimise environmental risks in general. A proposed rewording of the measures is:</p> <p>“Change the tree species mix (for example broadleaves) , based on a site</p>

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	is not feasible. On the more sensitive sites, the restocking with less nutrient demanding conifer species could be considered but wide scale planting with broadleaves is not silviculturally possible nor economically viable. This measure should be deleted and/or re-worded and merged with S4.	assessment, to minimise soil disturbance and fertiliser application on replanting where environmental conditions permit and where it is silviculturally possible” This measure will be very site specific and on sensitive sites restocking with less nutrient-demanding conifer species should be considered also.
NS2_FPM_018	S6: Eutrophication and Sedimentation – Limiting felling coup size Arising from the requirements to felling the forest crop while standing, re-structuring the age of the forest property and economic costs of felling, there are limits to how small the felling coups can become. A more practical alternative would be to determine the percentage of a waterbody that can be felled over a three year period rather than capping the felling coup size.	It is agreed that a more effective measure is to limit the felling coup size based on modelling the impacts at a catchment, sub-basin or waterbody scale rather than setting an absolute maximum coup size. A proposed rewording of the measure is: “Limit felling coup size in order to minimise the impacts from nutrient and/or sediment loss. This measure should form part of a multi-year felling plan for a given water body which will indicate the percentage of forest area to be felled and the expected nutrient and sediment release”. The measure is site specific and requires a detailed site assessment.
NS2_FPM_018	S7: Eutrophication and Sedimentation – Establish new forest structures on older plantation sites The best time to restructure a forest stand is after clearfelling. It is at this stage of the forest cycle that riparian zones are installed and drainage layout modified to comply with current Forest Service Guidelines. The feasibility of implementing a revised drainage layout and establishing riparian zones in a semi-mature no thin crop can only be considered on a site by site basis. Cognisance must be taken that the stability of the entire stand can be severely comprised arising from the implementation of these measures, the attendant and potentially serious impacts on the local water body and the considerable economic cost associated with this measure.	It has always been envisaged that a suite of measures would be adopted where appropriate. These of necessity would be site specific. At the very least riparian buffer zones should be in place prior to harvesting where feasible. A proposed rewording of the measure is as follows: “Establish new forest structures on older plantation sites (including riparian buffer zones, drainage layouts, species mix, open areas) based on a site by site assessment.” The assessment would take account of the impact of the restructuring on the overall forest stand stability to ensure no additional adverse effect on water status. However, a priority is to establish buffer zone management prior to felling.
NS2_FPM_018	S8: Hydromorphology – Audit of existing drainage networks in forest catchments Under current Coillte Best Management Practice, the	Acknowledged.

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	<p>drainage network of a stand is reviewed as part of the Environmental Impact Assessment prior to harvesting and subsequent re-stocking. Consideration is given to the best measures to be adopted to minimise the impact on the receiving local water body (ies) during and after the forest operations. This document is under constant review at this time and subject to alteration, change and further addition as the forest operations progress and additional protection measures are identified, implemented and documented.</p>	
NS2_FPM_018	<p>S9: Pesticide Use – Reduce pesticide usage This measure should merged with S10, S11 and S23 and form part of an Integrated Pest Management plan for each Forest Property, including delaying re-stocking by 3 to 5 years (fallowing), use of pre-dipped plants, reduced pesticide usage and experimenting with alternate biological control methods.</p>	<p>The merging of these measures will be considered for the final plans. While it is acknowledged that Coillte have an Integrated Pest Management Plan, it is important to recognise that these measures apply to all forest owners/managers.</p> <p>A proposed rewording of the measure is as follows: “Pesticide Use - Reduce and monitor pesticide usage by delaying any restocking by 3-5 years, using pre-dipped plants from nurseries or developing alternate biological control methods. A register of pesticide use should be maintained.”</p>
NS2_FPM_018	<p>S12: Acidification – Restructure of existing forests This issue could be addressed if the location of the impacted water bodies were made known to Coillte and could be included in the relevant Forest Management Plans. Consideration should also be given for the relaxing of the Forest Service regulation of re-stocking sites within two years of felling to up to five years to facilitate greater diversity in age classes in the forest stand.</p>	<p>Agreed. A proposed rewording of the measure is as follows: “Acidification - Restructuring of existing forests located on identified high acidification risk areas. Forest management plans to include acid impact potential risk maps based on soil type, underlying geology and known water chemistry to avoid future acid impacts.l”</p>
NS2_FPM_018	<p>S13: Acidification – Mitigate acid impacts symptomatically using basic material Coillte would have serious reservations on the efficacy of the above measure to mitigate impacts in acid sensitive areas. The long-term benefits of liming Irish</p>	<p>It is agreed that this measure needs further research to be demonstrably effective. A proposed rewording of the measure is as follows: “Acidification - Mitigate acid impacts symptomatically using basic material (e.g. limestone or sand liming) where such mitigation is</p>

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	waters has not been demonstrated and thus would be of little use to the Forest Manager/Practitioner in buffering acid sensitive waters. Arising from the uncertainties surrounding this measure, it should be omitted from the suite measures and subject to further research.	demonstrated to be technically feasible and where the application of such materials will not give rise to adverse water status impacts.”
NS2_FPM_018	<p>S14: Acidification – Manage catchment drainage to increase residence times and soil wetting, including no drainage installation in some areas</p> <p>Similar to S13, this measure warrants further research prior to adoption in the field. Coillte could not condone the deliberate raising of the water table within a forest property, resulting in unquantifiable impacts on the growing forest including the potential for serious wind throw, mortality of the trees, and potential on unforeseen impacts to adjacent private landowners. Until this measure has been verified as been scientifically valid and practical to implement, it should be removed from the suite of measures.</p>	<p>This is one of a suite of measures to mitigate acidification impacts and requires a site assessment before implementation. It is envisaged that this measure would typically be applied to parts of a forest site, those closest to the natural watercourses or other locations where topography allows. The measures may result in abandonment of the crop in those parts of the forest where it is applied. NPWS does not accept that further research is required on this measure. The scientific basis of the measures is that slowing the loss of water from a site increases infiltration and buffering, thereby mitigating acid episodes. Furthermore, if it is found that soil-derived sulphur is contributing to acidification in peaty-soil catchments, drainage will be a direct cause of acidification.</p> <p>A proposed rewording of the measure is as follows: “Acidification - Manage catchment drainage to increase residence times and soil wetting, including no drainage installation in some areas where this has been demonstrated to be technically feasible and where it will not give rise to adverse impacts on water quality status.”</p>
	<p>S15: Acidification – Implement measures to increase stream production</p> <p>While Coillte would be highly supportive of this measure, the cost of fencing and weed control would be very costly and would require grant aid if it was to be implemented across the whole estate.</p>	Comments noted. This could be a highly effective measure at mitigating acid impacts.
NS2_FPM_018	<p>S16: Eutrophication – Establish riparian zone management prior to clearfelling</p> <p>Where possible, Coillte will endeavour to install buffer zones in stands that were planted prior to the</p>	Acknowledged. As with other forestry measures in Table 6.2, this measure is intended to be applied to appropriate sites/areas, following risk assessment. The measures will be chosen to minimise the impact on the aquatic environment.

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	<p>Guidelines. This issue can only be addressed on a site by site basis, the prime requisite been to minimise the impact on the water quality of the adjacent watercourses. The installation of buffer zones on ‘no thin’ semi-mature crops will be the most problematic and one that will require further research on how it can be implemented practically without de-stabilising the remaining crop and resulting in significant silt and nutrient runoff. To that end, a COFORD funded Woodlands of Ireland led project on Riparian Zones should provide the forest manager some advice on how this can be achieved.</p>	<p>A proposed rewording of the measure is as follows: “Eutrophication and Sedimentation - Establish riparian zone management prior to clearfelling where technically feasible and following site assessment to determine the most appropriate buffer widths and vegetative cover. The establishment of such management should not result in adverse impacts on water status.”</p>
NS2_FPM_018	<p>S18: Eutrophication – Manage catchment drainage to increase residence times and soil wetting, including no drainage installation in some areas See comments under S14.</p>	<p>This is one of a suite of measures to mitigate eutrophication impacts and requires a site assessment before implementation. It is envisaged that this measure would typically be applied to parts of a forest site, those closest to the natural watercourses or other locations where topography allows. The measures may result in abandonment of the crop in those parts of the forest where it is applied. NPWS does not accept that further research is required on this measure. The principal of slowing the loss of water from a site in order to increase infiltration, up-take of nutrients by plants and filtration of particulate matter is the same as forms the basis of buffer zones.</p>
NS2_FPM_018	<p>S19: Sedimentation – Establish riparian zone management prior to clearfelling See comments under S16.</p>	<p>As with other forestry measures in Table 6.2, this measure is intended to be applied to appropriate sites/areas, following risk assessment. The measures will be chosen to minimise the impact on the aquatic environment.</p> <p>A proposed rewording of the measure is as follows: “Eutrophication and Sedimentation - Establish riparian zone management prior to clearfelling where technically feasible and following site assessment to determine the most appropriate buffer widths and vegetative cover. The establishment of such management should not result in adverse impacts on water status.”</p>
NS2_FPM_018	<p>S21: Sedimentation – Manage catchment drainage</p>	<p>This is one of a suite of measures to mitigate sediment loss and requires</p>

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	<p>to increase residence times and soil wetting, including no drainage installation in some areas See comments under S14 & S18</p>	<p>a site assessment before implementation. It is envisaged that this measure would typically be applied to parts of a forest site, those closest to the natural watercourses or other locations where topography allows. The measures may result in abandonment of the crop in those parts of the forest where it is applied. NPWS does not accept that further research is required on this measure. The principal of slowing the loss of water from a site in order to increase infiltration and filtration of particulate matter is the same as forms the basis of buffer zones.</p>
NS2_FPM_018	<p>S22: Hydromorphology – Enhance drainage network management – minimise drainage in peat soils. Coillte will at time of re-stocking optimise the drainage network to ensure that it complies with the Forest Service Guidelines. Nevertheless, by not draining some sites, most particularly on peat soils, serious damage to the subsequent rotation will occur leading to the loss of the crop, an option that Coillte cannot accept.</p>	<p>Comments noted. All measures implemented under the RBMPs and SBMPs must be effective in delivering the WFD objectives and must be subjected to a cost-benefit analysis. It is acknowledged that some of the forestry measures, as with all other measures, could result in economic losses and/or more severe operation restrictions. NPWS recommend that such economic considerations be directed to the National Advisory Group.</p>
NS2_FPM_018	<p>General Comment: There appears to be a significant overlap between the measures listed in Table 6.2 (and commented upon already in the WRBD-Draft RBMP) and Table 6.3. Furthermore, some of the measures listed earlier in the table are repeated again later in Table 6.3. Therefore, 6.3 needs to be significantly edited to include additional measures not mentioned heretofore in any RBMP.</p>	<p>Note that Table 6.3 is prefaced by the need to develop a Forestry Management Plan for each pearl mussel Catchment which should identify the most suitable measures from the list indicated in the Table.</p>
NS2_FPM_018	<p>AM1: The option of not felling to the considered in sensitive sites This measure would not be favoured by forest managers due to the fact that if abandoned, the tree crop will eventually succumb to wind or other natural factors and lead to a significant and uncontrolled release of sediment and nutrients over a prolonged period. To ameliorate such chronic losses from the</p>	<p>This measure must remain one of the suite of options available for the most sensitive areas. This option may present the lowest risk to the pearl mussel and its aquatic environment in situations where the risk of windblow is low, e.g. where an immature crop is “in check” and will not, without fertilisation, reach critical heights.</p>

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	<p>system, even the most sensitive sites may require active management and must be judged on a site by site basis following the existing guidelines and best silvicultural practices.</p>	
NS2_FPM_018	<p>AM2: Coniferous plantations within sensitive areas of the catchment shall be subject to final felling and replacement with continuous-cover woodland or semi-natural bog/moor</p> <p>This measure has two separate components, one a replacement of coniferous plantation with low impact silvicultural system and the other a habitat restoration programme. To establish a continuous cover woodland (e.g. broadleaf) would require additional inputs of fertiliser to establish the crop and possibly herbicides to suppress weed growth which may be inappropriate on sensitive sites. Furthermore, establishment of such a crop and management system would have significant establishment costs and ongoing management expenses which would need to be grant aided if such a scheme were to become a reality.</p> <p>Secondly, restoring natural bog/moor habitats should focus only on those areas only of genuinely high nature conservation potential to benefit the ecosystem at large. In addition, such restorations imply a loss of productive land to Coillte and a significant reduction in the economic value of its estate. Finally, to successfully achieve such restorations a significant financial investment must be made, involving purchasing of appropriate drain blocking materials, surveying of topography and site ecology, use of machines and labour all without compensation at present to the forest owner rendering these measures unrealistic in today's economic climate.</p>	<p>Comments noted. The measures will be clearly separated in the final plans.</p> <p>The water and habitat quality requirements of the freshwater pearl mussel will drive the selection of the forestry measures, rather than the restoration potential of the terrestrial habitat. The measures selected will be designed to minimise the impact on the pearl mussel and its aquatic habitat.</p> <p>Mechanisms for implementing these and related measures need to be discussed at a high, inter-departmental level.</p>
NS2_FPM_018	<p>AM3: Establish riparian zone management prior to clearfelling</p>	<p>This measure remains relevant as it refers to the Forest Management Plan suite of measures options.</p>

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	Delete as already covered in S16.	
NS2_FPM_018	AM4: Change the tree species mix (e.g. broadleaves) on replanting Delete as already covered in S5.	This measure remains relevant as it refers to the Forest Management Plan suite of measures options.
NS2_FPM_018	AM5: Limit felling coup size Delete as already covered in S6.	This measure remains relevant as it refers to the Forest Management Plan suite of measures options.
NS2_FPM_018	AM6: Felling shall be done according to the Forestry and FPM Requirements Coillte support this measure in designated FPM catchments.	Comment noted
NS2_FPM_018	AM7: Following felling of existing forest stands, restore blanket bog and wet heath through drain blocking and appropriate site management Delete as already covered in AM2.	This measure remains relevant as it refers to the Forest Management Plan suite of measures options.
NS2_FPM_018	AM8: Remove bankside trees by hand as whole trees where feasible Removal of trees felled by hand presents a significant logistical issue in terms of removal of the stem from the riparian zone without undue disturbance. A balance must be sought between excess damage caused by the removal of the tree itself versus establishment of an appropriate (and approved under the guidelines) extraction rack to mechanically cut and remove trees. Again this issue must be explored on site by site basis.	As with all measures listed in Table 6.3, implementation of this measure will only occur at the specific sites where it is required. This measure applies to general riparian zone management, e.g. for riparian trees in farmland or urban areas, as well as to commercial and non-commercial forestry operations.
NS2_FPM_018	AM9: Enhance sediment control Delete as already covered in S20.	This measure remains relevant as it refers to the Forest Management Plan suite of measures options.
NS2_FPM_018	AM11: Main silt traps to be large enough for FPM conservation requirements The issue of silt trap efficacy and silt control measures	Comments noted. Research clearly indicates that standard forestry silt traps are insufficient. Research and design criteria used elsewhere in the world can be applied to the Irish forestry situation, with the necessary

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	should be addressed here rather than silt trap size. Blocking of preferential flow paths to the receiving waters should be the priority. Further research needs to be conducted to determine the optimum silt control mechanisms for Irish soils on sensitive sites to reliably inform practitioners in the field.	adjustments for soils, climate etc. Measures must ensure that the sediment management system is capable of blocking sediment in preferential flow paths to watercourses. Note: the HYDROFOR Project will also test silt trap effectiveness.
NS2_FPM_018	AM12: Prohibition of fertilisation on sensitive sites Coillte are happy to abide by the existing guidelines concerning fertilisation on sensitive sites.	More stringent requirements are likely in sensitive sites within the pearl mussel catchments.
NS2_FPM_018	AM13: No replanting or afforestation on certain hydro-geological settings (peat soils) on sensitive sites Delete as already covered in AM1	This measure remains relevant as it refers to the Forest Management Plan suite of measures options.
NS2_FPM_018	AM14: Enhanced drainage network management Delete as already covered in S14 & S22.	This measure remains relevant as it refers to the Forest Management Plan suite of measures options.
NS2_FPM_018	AM15: Reduction/cessation of pesticide use Delete as already covered in S9	This measure remains relevant as it refers to the Forest Management Plan suite of measures options.
NS2_FPM_018	AM16: Pre-dipping of trees in nurseries prior to planting Delete as already covered in S9 & 10	This measure remains relevant as it refers to the Forest Management Plan suite of measures options.
NS2_FPM_018	AM17: Maintaining registers of pesticides used in the catchment Delete as already covered in S11	This measure remains relevant as it refers to the Forest Management Plan suite of measures options.
NS2_FPM_018	AM18: Establish native riparian woodland buffer as appropriate Delete as already covered in S16 & AM3.	This measure remains relevant as it refers to the Forest Management Plan suite of measures options.
NS2_FPM_018	AM19: Strict adherence to the Forestry and FPM requirements Delete as already covered in AM6..	This measure remains relevant as it refers to the Forest Management Plan suite of measures options.

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NS2_FPM_018	AM20: Any associated roading should be subject to risk assessment Coillte are satisfied to comply with existing National Guidelines on forest road development until it is clearly demonstrated that the current guidelines are insufficient to control sediment loss.	Comments noted. The potential impacts from future forest road development must be risk assessed as part of the forestry management plans.
NS2_FPM_018	AM21: Establishment of continuous cover, native bankside trees at mussel habitat locations Delete as already covered in S16 & AM3.	This measure remains relevant as it refers to the Forest Management Plan suite of measures options.
NS2_FPM_018	AM22: Trees at risk of falling should be removed Delete as already covered in AM8	This measure remains relevant as it refers to the Forest Management Plan suite of measures options.
NS2_FPM_018	AM23: Research into buffer zones to identify optimum buffer zone design and establishment methods Coillte actively encourage and support research into this area, e.g. the COFORD funded HYDROFOR and CROW projects.	Comments noted:
NS2_FPM_018	AM24: Remove immature forestry from peat and peaty soils through felling to waste and block drains Delete as already covered in S16 & AM3.	This measure remains relevant as it refers to the Forest Management Plan suite of measures options.
NS2_FPM_018	AM25: Abandon immature forestry on peat and peaty soils Delete as already covered in AM1.	This measure remains relevant as it refers to the Forest Management Plan suite of measures options.

3.1.7 Usage and discharge of dangerous substances

Submission Reference No.	Issues Identified	Response
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NS2_FPM_013	Dangerous Substances - Implementation of these measures will only occur at the specific sites where they are required. It is recommended that the EPA is added to the list of 'Who Leads'.	Comment noted.
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3.1.8 Physical modifications

Submission Reference No.	Issues Identified	Response
NS2_FPM_003 NS2_FPM_004 NS2_FPM_007	Barriers to migration GIS dataset. It needs to be emphasized that this dataset was compiled only for salmon and not for other fish species. This dataset needs to be updated and the impact on passage on other fish species needs to be assessed.	Comment noted.
NS2_FPM_003 NS2_FPM_004 NS2_FPM_007	Codes of practice. It is recommended that the lead authority comprise OPW and the Fisheries Boards jointly, as it is essential that Fisheries Boards be involved in this.	The final plans will be altered to include the fisheries board as one of the lead authorities and will be fully involved in the developed of any codes of practice which should be developed in relation to physical modifications.
NS2_FPM_003 NS2_FPM_004 NS2_FPM_007	Similarly, as regards the heading ' <i>Impassable barriers remediation schemes</i> ', while the Local Authority have been prescribed as the Lead Authority, we would as above strongly recommend that the Fisheries Boards be included here as a joint lead authority. We make this recommendation based on our having developed very considerable expertise and skills at Central and Regional Fishery Board level, from our work with the OPW in the context of national schemes, individual local authorities on a county basis, and having a regard to the very large body of work carried out by the Boards particularly over the last number of years under various measures to develop angling tourism where large areas of river channels have been successfully rehabilitated and remediated in works carried out either by the Boards directly, or under our guidance and supervision.	The final plans will be altered to include the fisheries board as one of the lead authorities in relation to the development of any remediation schemes for impassable barriers. Their assistance and advice in relation to the development of such schemes in conjunction with the OPW and Local Authorities is greatly appreciated.

Submission Reference No.	Issues Identified	Response
	of the area in which the FPM's are believed to be present?	
NS2_FPM_003 NS2_FPM_004 NS2_FPM_007	The Draft Plan proposes that all river morphological alterations should be ' <i>subject to a project level appropriate assessment</i> '. The proposal also states ' <i>this includes all fisheries enhancement</i> measures. Clarification is sought as to whether the reference to fisheries enhancement applies only where the fisheries enhancement entails morphological alterations.	This measure applies to all activities that have to the potential to negatively impact on the SAC and the freshwater pearl mussel.
NS2_FPM_003 NS2_FPM_004	No sand, gravel or stone shall be removed from rivers designated for freshwater pearl mussel. Fisheries boards	The fisheries boards will be identified as one of the competent authorities in the final plans.

Submission Reference No.	Issues Identified	Response
<p>NS2_FPM_007</p> <p>NS2_FPM_003</p> <p>NS2_FPM_004</p> <p>NS2_FPM_007</p>	<p>should be designated as one of the competent authorities.</p> <p>There are however circumstances where the removal of sand, gravel, stones, and also what might broadly be described as silts, is necessary from rivers to offset impacts from changes in stream hydraulics. Changes in flow regime often result as a consequence of improperly executed works upstream by land owners, and occasionally by or on behalf of public authorities. In circumstances where as a consequence of a deliberate act or omission, stones or boulders or other riverine materials are left or become positioned such that they act as a deflector and lead to destabilisation or undercutting of river banks, or otherwise result in the blanketing of salmonid nursery or spawning areas, we would submit that such removal is a priority requiring action to be undertaken at the earliest possible opportunity. In many instances, the Board's would be in a position to immediately take such essential action. We would hope that relations between the Boards and NPWS would be such on the ground as to allow for an understanding of the need to expedite such works within a short time frame, and that it would be understood that such short term works of limited duration would not require the carrying out of an appropriate assessment.</p>	<p>Comments noted</p> <p>A series of meetings has been initiated between the NPWS and CFB to discuss such issues.</p>
<p>NS2_FPM_006</p>	<p><i>Road and Bridge Construction Adjacent to River</i></p> <p>With respect to road and bridge construction the impact of works on the FPM may have to be assessed. Existing roads and bridges, including materials used in their construction, may have to be examined and, if found to be impacting on the FPM may have to be remediated.</p> <p>This measure will require survey work to be undertaken by the Council of existing structures and it will have a significant impact on resources to carry out retrofitting remedial measures, which may themselves impact on the water quality if not managed by operators experienced in</p>	<p>The final plans will attempt to identify bridges that pose an on-going risk. Any retrofitting and remedial measures proposed are likely to require a Habitats Directive Article 6 Assessment (Appropriate Assessment) before proceeding with works. All future river crossing will require an assessment of the likely impacts to the pearl mussel populations.</p>

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	<p>this type of remedial work.</p> <p>It is felt it would be more practical to recommend that this measure be adapted only for future works in accordance with new regulations to control future engineering activities near rivers.</p> <p>Also river crossings are frequently undertaken in communication with the Fisheries Board in progressing water services projects. The scope of the measures proposed in such circumstances is not clear.</p>	
NS2_FPM_006 NS2_FPM_027	<p><i>Sand and gravel extraction</i></p> <p>It is not clear what support, if any, will be provided to local authorities to assist with appropriate assessment to determine if such works will have a negative impact on the FPM. It is recommended that the NPWS consider producing guidance documents.</p>	A guidance document on Appropriate Assessment for Local Authorities is nearing completion. It is hoped to follow this with a series of guidance documents for specific habitats/species and pressures
NS2_FPM_006	<p><i>Housing and development</i></p> <p>“Identify areas where further development represents a significant risk to pearl mussel conservation and implement development restrictions as necessary”.</p> <p>It is not clear what support or guidance will be provided to the local authorities to assist with this requirement. If development is too restrictive or onerous treatment limits are required for discharges this may promote development beyond municipal wastewater treatment plants and encourage the further development of on-site wastewater treatment systems in less favourable areas.</p>	This measure is aimed to deal specifically with the risks posed by on-site systems. High risk geological settings will be identified using GIS and field survey work, and high risk areas will be mapped and guidance provided.
NS2_FPM_009	The potential costs involved in some elements of this proposal are significant; for example, any possible remediation of roads construction material with substantial limestone content. In addition, there are significant unknowns involved in any possible “retrofitting	<p>Comment noted:</p> <p>Any retrofitting and remedial measures proposed are likely to require an Habitats Directive Article 6 Assessment (Appropriate Assessment) before proceeding with works.</p>

Submission Reference No.	Issues Identified	Response
	construction” of roads and bridges.	
NS2_FPM_009	Sand and Gravel Extraction – there may be difficulty for local authorities in restricting such activity under current legislation.	Comment noted The Fisheries Board will also be added as a competent authority
NS2_FPM_009 NS2_FPM_027	Housing and Other Development – The potential restriction of further development in identified areas is likely to be very controversial. Further restrictions on development in West Clare would prove very controversial and difficult for the members of the council in this area. Implementation of any guidance document for the protection of FPM populations would require training and good guidance.	Comments noted: If restrictions on developments are required to achieve the objectives of the WFD and Habitats Directive then they have the full force of law. Appropriate guidance will be provided.
NS2_FPM_014	Laois County Council has only limited scope for works to correct channelisation works previously carried out. The Office of Public Works has a greater role in morphology. Therefore the Council considers it cannot give commitments on behalf of this body or any other body.	Comment noted.
NS2_FPM_015	As indicated in the comments furnished on the foregoing basis, certain of the roads-related mitigation measures are particularly onerous and would entail significant costs. The expenditure involved would have to be financed from the Exchequer resources made available to the Authority in the case of national roads (and through a combination of local authority own resources and Exchequer resources in the case of non-national roads). It is not apparent to the Authority that the measures concerned are appropriate or would make any meaningful contribution to the protection of the freshwater pearl mussel/the quality status of their aquatic environment or would warrant the expenditure that would arise in implementing such measures. The Authority’s concerns in this regard are entirely consistent with those provision of the Treaty establishing the European Community whereby policy on the environment is to take account, inter alia, of available scientific and technical data,	Comment noted: The final plans will attempt to identify roads and bridges that pose an on-going risk. Any retrofitting and remedial measures proposed are likely to require a Habitats Directive Article 6 Assessment (Appropriate Assessment) before proceeding with works. As for all sub-basin measures any roads-related mitigations will be subject to cost-effectiveness analysis. The results of the 2009 surveys will highlight roads/bridges that present an on-going risk to pearl mussel populations.

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	as well as the potential benefits and costs of action or lack of action.	
NS2_FPM_015	<p>The NRA considers that some of the proposed mitigation measures, in particular, the resurfacing of roads, are excessive in the context of the already well documented pressures on pearl mussel populations which are related to activities such as agriculture, forestry and sewage effluent. It is our belief that further surveys should be carried out in order to identify if activities related to roads are a significant pressure on pearl mussel populations before any mitigation measures are considered. The draft Management Plan document is proposing to carry out surveys of impacts but at the same time it is outlining specific mitigation measures in advance of such studies. Considering the cost implications of some of the proposed mitigation measures, we believe that the outcomes of the surveys and the likely impact of mitigation measures should be comprehensively considered well in advance of implementing any mitigation. In this context, and taking account of Article 11 of the Water Framework Directive (WFD), the correct procedure would be to have available the results of detailed surveys in order to identify, if indeed, road schemes are a significant pressure on pearl mussel catchments and to inform the preparation of possible mitigation measures. Where the outcome of such surveys identify roads-related impacts as significant, then consultation should take place with the relevant body (local authority, NRA) on options for feasible mitigation measures in the context of the WFD.</p>	<p>The results of the 2009 surveys will highlight roads/bridges that present an on-going risk to pearl mussel populations. Final plans will outline measures for the remediation of such risks. These measures may need further investigations and quantification of the risks. The development of mitigation measures will require significant consultation with the NRA and LA. Any retrofitting and remedial measures proposed are likely to require a Habitats Directive Article 6 Assessment (Appropriate Assessment) depending on scale and scope of the measures an Appropriate Assessment may be required before proceeding with works.</p>
NS2_FPM_015	<p>The NRA anticipates that some of the proposed mitigation measures will not contribute significantly to restoring good status in the context of the WFD, Further attention should be given as to the appropriateness of proposed measures and their technical feasibility and cost effectiveness. It is essential that economic tests of any proposed measures should be carried out prior to any recommendations in line</p>	<p>Cost-effectiveness analysis will be carried out on the proposed measures and measures will only be implemented at those sites where investigation and risk assessment show that specific pressures need to be remediated to restore the pearl mussels to favourable conservation status.</p>

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	with the WFD.	
NS2_FPM_015	<p><i>Measure: All planned future roads or bridges of any size shall be assessed for potential negative impacts to mussel populations during construction and operation. Future roads or bridges of any size should be subject to the River Basin Management Plan Programmes of Measures for morphology including new regulations to control future engineering activities near rivers. A guidance document for road crossings in pearl mussel catchments will be produced.</i></p> <p>Comment: The appropriateness and proportionality of the foregoing proposal, taking account of the comments already made on objective data and the level and significance of impacts related to roads, should be assessed as should the proposed application to all planned roads and bridges, irrespective of their size, location and form of construction.</p> <p>The NRA welcomes any guidance document for road crossings in pearl mussel catchments and looks forward to participating in the development of such a document. As you may be aware, the NRA has already produced a series of best practice documents addressing a range of potential environmental impacts arising from the construction and operation of national road schemes. In addition, we have conducted specific detailed research on the impacts of road runoff on surface water quality and we are currently undertaking research on the impact of road structure in sensitive ecological ecosystems.</p>	<p>Comment noted Scientific evidence supports the fact that bridges and roads of all sizes can or may cause significant impact to mussel populations, within the footprint and upstream and downstream of the crossing. All proposed crossings shall be subject to appropriate assessment.</p> <p>The NRA will be consulted on any guidance documents in relation to road crossings.</p>
NS2_FPM_015	<p><i>Measure: A survey of ongoing damage caused by temporary or permanent roads and bridges shall be carried out and recommendations made for retrofitting construction through silt trapping, resurfacing and other remediation works.</i></p> <p>Comment:</p>	<p>The results of the 2009 surveys will highlight roads/bridges that present an on-going risk to pearl mussel populations. Final plans will outline measures for the remediation of such risks. These measures may need further investigations and quantification of the risks. The development of mitigation measures will require significant consultation with the NRA and LA. Any retrofitting and remedial measures proposed are likely to</p>

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	<p>It is difficult to understand what role resurfacing of roads is likely to play as a mitigation measure in the above. We would be interested in reviewing the data that demonstrates that the composition of permanent roads is impacting on pearl mussel population. Identification of roads-related mitigation measures should be informed by having prior available survey and impact data. The findings of these data collection surveys should be discussed with the relevant authorities. If mitigation measures are deemed necessary, due to documented significant impacts, then these should be discussed in detail with the either the NRA or the local authorities <i>prior</i> to any recommendations being brought forward</p> <p>Will the impacts of such remediation be quantified on the basis of the existing pressures on the pearl mussel populations? Do all of these measures represent a cost effective mitigation response? Resurfacing of roads is considered to be an excessive mitigation measure. Further explanation and elaboration of <i>other remediation works</i> is required. How will the costs of such mitigation measures be considered in the context of the WFD?</p>	<p>require a Habitats Directive Article 6 Assessment (Appropriate Assessment), depending on scale and scope of the measures. Cost-effectiveness analysis will be carried out on the proposed measures and measures will only be implemented at those sites where investigation and risk assessment show that specific pressures need to be remediated to restore the pearl mussels to favourable conservation status.</p>
NS2_FPM_015	<p><i>Measure: During the above surveys, the road- and path-surfacing material shall be examined. Where necessary, any hardcore or surfacing that includes substantial limestone content will be remediated. These works will require an impact assessment.</i></p> <p>Comment: Limestone is an aggregate commonly used in the construction of national road schemes. The statement above suggests that the use of limestone in hardcore or surfacing will in some way act as a pressure on pearl mussel rivers or streams. If this assumption is correct, then there will have to be some interaction between the groundwater and the road aggregate resulting in some alteration to the groundwater quality which in turn will affect surface water. In all current</p>	<p>Comment noted:</p> <p>The primary issue is in regard to the surface water run off.</p> <p>The results of the 2009 surveys will highlight roads/bridges that present an on-going risk to pearl mussel populations. Final plans will outline measures for the remediation of such risks. These measures may include further investigations and quantification of the risks. The development of mitigation measures will require significant consultation with the NRA</p>

Submission Reference No.	Issues Identified	Response
	<p>road designs, groundwater is deliberately kept below the level of the road as, otherwise, contact with groundwater would quickly lead to very serious maintenance issues for the road in question. In this context, it is difficult to see how construction materials could be a significant issue resulting in impacts on pearl mussel streams. We would welcome the opportunity to review the data supporting the measure proposed.</p> <p>The use of the terms ‘where necessary’ is confusing. It is unclear who will take the decision when remediation is necessary or indeed who will undertake the surveys? Will it be necessary to undertake consultation with the relevant local authorities or contractor?</p>	<p>and LA. Any retrofitting and remedial measures proposed are likely to require a Habitats Directive Article 6 Assessment (Appropriate Assessment) depending on scale and scope of the measures.</p>
<p>NS2_FPM_016 NS2_FPM_017</p>	<p>Clodiagh catchment, plus other catchments in general Whilst no morphology pressures have been identified in the sub catchment (reference to the Clodiagh), the nature of silt and other sediments in a river and their movement downstream would suggest that morphological pressures upstream of the Clodiagh populations (and other catchment populations), which may be causing alterations in energy of the flow and sediment loading of the river, should also be considered in this plan. At least one set of statutory guidelines (the FPM & Forest harvesting guidelines) refers to impacts from operations up to 6km upstream, although research shows that 6 km is inadequate as a cut off for potential sediment impacts.</p> <p>An Taisce very much welcome the proposed measure under ‘Physical Modifications’ to develop a registration and authorization system for physical modifications, although consider that this proposal does not go far enough. It needs to read ‘develop and implement’ new morphology regulations. Also, this commitment needs to be time bound, otherwise there is a great risk that it will remain an aspirational measure, for which there should be no place in a</p>	<p>Comments noted</p> <p>The results of the 2009 field surveys included morphological survey and catchment walkover data. These results will be presented in the final plans and will be used to develop targeted measures.</p> <p>The regulation of physical modifications is a requirement under the WFD. Mechanisms for such regulation are under consideration by DEHLG.</p>

Submission Reference No.	Issues Identified	Response
NS2_FPM_025	As a point of information, the in-river structures referred to at the foot of page 24 are weirs that were mostly built in the 1870s for the purpose of enhancing angling. They are made of local stone and do not involve any limestone (p.25).	Chapter 4, Section 4.2.2 of the Bundorragha plan will be revised to include this information.
NS2_FPM_027	<p>Road and Bridge Construction Adjacent to River</p> <p>The impact of these works on the FPM will have to be assessed. Existing roads and bridges, including materials used in their construction, will have to be surveyed and if found to be impacting on the FPM may have to be remediated. The potential costs involved in this proposal are significant; e.g. any possible remediation of roads construction material with limestone content, incidentally Clare County Council uses limestone road materials extensively. In addition, there are significant unknowns involved in any possible “retrofitting construction” of roads and bridges. New and more expensive methods of remediation would be required, which measures would be required not to impact on water quality.</p> <p>These proposals would have significant effects on the resources of the Council.</p> <p>One measure proposes that a survey is to be conducted on an on-going basis in relation to impacts from roads and bridges. Are these from those under construction or already in existence? The lead body is the NS2-Pearl Mussel Project but the LA is also mentioned but not as to what capacity or involvement. Essentially any remediation of roads and bridges would fall on the shoulders of the L.A. Remediation is not detailed and what potential impacts this might have on the FWPM.</p>	<p>Comments noted</p> <p>The results of the 2009 surveys will highlight roads/bridges that present an on-going risk to pearl mussel populations. Final plans will outline measures for the remediation of such risks. These measures may include further investigations and quantification of the risks. The development of mitigation measures will require significant consultation with the NRA and LA. Any retrofitting and remedial measures proposed are likely to require a Habitats Directive Article 6 Assessment (Appropriate Assessment) depending on scale and scope of the measures. Cost-effectiveness analysis will be carried out on the proposed measures and measures will only be implemented at those sites where investigation and risk assessment show that specific pressures need to be remediated to restore the pearl mussels to favourable conservation status.</p>

3.1.9 Abstractions

Submission Reference No.	Issues Identified	Response
NS2_FPM_003 NS2_FPM_004 NS2_FPM_007	Abstractions – review and conduct risk assessments. Pearl mussel should not be treated in isolation in the EIS/risk assessment. Recommendations: other species should be included also, i.e. fish	The review of abstractions and risk assessment process will consider the overall ecological impact and in particular the impact on the riverine habitat. Given the importance of fish to the pearl mussel lifecycle they will also be considered when carrying out these assessments.
NS2_FPM_005	Water abstraction, it is not clear if this is intended to be a notifiable action.	Water abstraction which may affect the hydrology of a site, is a notifiable action within freshwater pearl mussel SACs. Under the WFD, regulation of abstractions is required as a basic measure.
NS2_FPM_006	<p>Groundwater sources are exploited in preference to surface water sources by Cork County Council and hence it is “reluctantly” that Local Authorities resort to river abstractions. Even allowing for improvement in unaccounted for water figure, there will be an increased water demand to satisfy future developments.</p> <p>The prospect of reducing the abstracted volumes at existing abstractions locations has enormous implications for water authorities. Present water abstractions are limited to percentages of the 95%-tile flow and the plans present no evidence that water abstractions present a real risk. For instance, the Munster Blackwater Draft Sub-Basin Management Plan in Section 4.2.3 dealing with Abstractions says in general terms that water abstraction “can” cause low flows that “can” be damaging to the freshwater pearl mussel.</p>	<p>Abstractions from both upstream lakes and rivers of pearl mussel populations can cause significant impacts on pearl mussels. Any significant future abstractions and proposed increases to existing abstractions will require and Appropriate Assessment. Furthermore, on-going abstractions identified by the 2009 field surveys as a significant risk to pearl mussels populations will also include an assessment.</p>
NS2_FPM_006	Section 4.2.3 Ownagappul sub-basin plan This section refers to an abstraction within Glenbeg Lough but states that the risk assessment undertaken	Comment noted – details in relation to the proposed abstraction will be investigated further and discussed in the final plan. Furthermore, where an on-going abstraction is identified by the 2009 field surveys as a

Submission Reference No.	Issues Identified	Response
	<p>by ERBD places this in the “not at risk” category. There is no reference to Glenbeg Lough in the document published by the ERBD in January 2009 but there is reference to Glenbeg Lough in Appendix A Details of EPA/ESBI Calculations with resultant Q95 flow for each abstractions catchment dated December 2008. However the abstraction from Glenbeg Lough is shown as 1,000 m³ per day whereas the planned abstraction is in the region of 5,000 m³/day. The proposed abstraction is vital to the western end of the Beara peninsula and there is no viable alternative supply available.</p>	<p>significant risk to pearl mussel populations or where increases are proposed an Appropriate Assessment will need to be carried out.</p>
NS2_FPM_006	<p>Section 4.2.3 Bandon sub-basin plan This section does not refer directly to the abstraction from Coolkellure Lake. In the document published by the ERBD in January 2009 there is reference to Coolkellure Lake and it is categorised as 2a. In Appendix A details of EPA/ESBI calculations with resultant Q95 flow for each abstractions catchment dated December 2008 the abstraction from Coolkellure is shown as 550 m³ per day whereas the planned abstraction is in the region of 1,200 m³/day. This abstraction is vital to the Dunmanway area.</p>	<p>Comment noted – details in relation to the proposed abstraction will be investigated further and discussed in the final plan. Furthermore, where an on-going abstraction is identified by the 2009 field surveys as a significant risk to pearl mussels populations or where increases are proposed an Appropriate Assessment will need to be carried out.</p>
NS2_FPM_006	<p><i>Water abstraction for agricultural purposes</i> Water abstraction by farmers using tankers is a generally a minor issue, the volumes abstracted are usually very small and not significant or prolonged. Rivers and lakes should not be used for washing tankers in any circumstances.</p> <p>It is considered that water abstractions for irrigation of crops such as potatoes may be a much more significant issue in specific areas. These use high volume pumping systems and travelling irrigators and are generally used at times of high soil moisture</p>	<p>The issue in relation to the abstraction by tankers concerns the direct damage to mussels by the wheels and the indirect damage caused through siltation of mussel habitat as a result of damage to the river bank and bed, rather than the volumes abstraction.</p> <p>Comments noted The 2009 fieldwork included the investigation of abstraction for irrigation purposes.</p>

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NS2_FPM_010	<p>deficit, usually coinciding with low watercourse flows. Control of these abstractions would be much more important as they can have significant impacts on already low stream flows.</p> <p>Abstraction of water for irrigation of crops may need to be controlled in pearl mussel habitats to avoid bank erosion and direct damage to mussels, and to prevent low flows in streams caused by high volume abstractions.</p> <p>Water abstraction from streams for use in spraying crops is not very significant in terms of the volume of water abstracted. However, the mixing of pesticides on the bank-side of watercourses when filling sprayers may be an important issue given the reported susceptibility of the Freshwater Pearl Mussel to certain pesticides. Control of this activity is also important given that 15% of the agricultural area in the catchment is arable land (circa 27, 623 ha).</p> <p>There may be compensation claims from farmers if they are forced to fence watercourses and prevent access by livestock given extra cost incurred by them in providing wells, pumps, piping and troughs. Farmers are already claiming compensation from local authorities for not being able to landspread slurries in non-spreading areas around new water abstractions, i.e. 100 metre or 200 metre radius non-spreading buffer zones (depending on volume of water abstracted) are specified around water supply abstractions in the Nitrates Regulations).</p> <p>Of concern to the Eastern Regional Fisheries Board is the fact that there is no reference to the significant numbers of sand pits in the catchment, especially in the Hacketstown, Kiltegan area. It is our experience</p>	<p>Comments noted</p> <p>Comments noted Mechanisms for the implementation of measures under the SBMPs are subject to ongoing discussion between DAFF and DEHLG</p> <p>The extensive number of sandpits in the catchment have been sited, investigated and risk assessed as part of this seasons fieldwork. Discussions have taken place with the senior fisheries officer in the South East to ensure all of these facilities have now been identified.</p>

Submission Reference No.	Issues Identified	Response
NS2_FPM_016 NS2_FPM_017	<p>that many of these facilities have intermittent abstractions from / discharges to nearby watercourses which have the potential for pollution of these waters and the Board requests that the Draft Plan address the impact of the numerous sandpits throughout the catchment.</p> <p>Clodiagh catchment, and applicable to all catchments (from *)</p> <p>One major abstraction is identified, the supply scheme for County Waterford, which *places the water body 'at risk', yet there do not appear to be any specific measures to alter this. Where the summary of measures lists 'review and conduct risk assessment' in relation to FPM in this catchment there is no time frame for conducting this measure. An Taisce consider it essential that important measures such as this be time-bound, especially as it is a very specific risk to this sub-catchment.</p>	<p>Comments notes</p> <p>The review of data for the final Sub-basin Management Plans will include the assessment of the likely impacts of such abstractions. Specific measures may then be detailed in the final plans and may include appropriate assessment of on-going and future abstractions.</p>
NS2_FPM_022	<p>Abstractions on Allow – do we have any specific details on the abstraction points for the Allow?</p>	<p>Information on abstractions will be collated through communications with Las and the 2009 fieldwork and these data will be incorporated into the G.I.S layers.</p>

3.1.10 Roles, responsibilities and funding

Submission Reference No.	Issues Identified	Response
NS2_FPM_006	<p><i>Catchment Awareness campaign</i></p> <p>It is not clear what level of participation would be expected from the local authorities.</p>	<p>The catchment awareness campaign will form part of the River Basin Management Plan programme of public awareness and targeted education campaigns lead by DEHLG. It is also envisaged that relevant Local Authority Heritage and Biodiversity officers can support this programme in their current roles.</p>
NS2_FPM_009	<p>It is difficult to see what role, if any, local authorities might have in this area.</p>	

Submission	Issues Identified	Response
Reference No. NS2_FPM_006 NS2_FPM_027	<i>RBD Pearl Mussel Technical Group</i> It is noted that this is proposed to be a technical group. If a wider stakeholder group is developed, it should use existing structures / bodies i.e. local authority Strategic Policy Committees or River Basin District Advisory Councils.	A national conservation working group has been established under the aegis of the WFD's national technical co-ordination group. The RBD Pearl Mussel Technical Groups will largely be comprised of members from existing structures / bodies. The NCWG is currently finalising the composition of the membership
NS2_FPM_009	The plans do not appear to contain specifics on the means by which implementation of the proposed measures is to be coordinated among the various agencies involved. In addition, it is also unclear as to which of these agencies, if any, will be charged with responsibility for coordinating these activities, and ensuring that the objectives of the plans are attained. In any event, it is our belief that the role of coordinating body should not be allocated to the local authorities	Regulation 14 of S.I. 296 of 2009 states that the Minister for the Environment, Heritage and Local Government shall monitor the implementation by public authorities of the sub-basin management plans.
NS2_FPM_009	While no detailed costings have been carried out, it would appear that implementation of the proposed measures, both basic and supplementary, which are proposed in the draft plans would entail considerable expenditure on the part of the local authorities and other agencies involved. Obviously, the plans do not directly address this issue, however, adoption of these documents in their current format would commit local authorities to incurring potentially significant expenditure in the short term, and on an on-going basis thereafter. Sourcing the funding, and other resources, necessary to implement all measures proposed would be extremely challenging in the current economic climate and, in our view, would be beyond the financial capacity of local authorities given the existing sources of funding available to the local government sector. Approval of the plans in their current format would effectively commit local authorities to expending significant monies at a time	Comments noted Final plans will contain measures for high risk areas identified during fieldwork carried out in 2009. All measures will be subject to cost effectiveness analysis prior to implementation. It should be noted under SI 296 of 2009, the Sub-Basin Management Plans do not require adoption by the Local Authorities but rather direct approval by the Minister for Environment, Heritage and Local Government. We encourage the on-going participation of the Local Authorities in the process of developing these plans.

Submission Reference No.	Issues Identified	Response
NS2_FPM_014	<p>when many are already experiencing severe financial challenges.</p> <p>Many of the additional measures described are outside of the remit of this local authority (Laois County Council – Nore sub-basin management plan). This is particularly relevant in the areas of agriculture, forestry, discharges from IPPC licensed facilities, river morphology and peat extraction.</p> <p>This Council (Laois County Council) also considers that additional legal obligations need to be placed on the owners of unsewered properties in order to achieve the objectives of the plan.</p>	<p>Where detailed measures are identified in the final sub-basin management plans, the lead authorities responsible for implementation will be identified also.</p> <p>NPWS would assume the best mechanism for implementing such legal obligations would be through Local Authority bye-laws under the Water Pollution Acts.</p>
NS2_FPM_014	<p>There are many sub catchments that are split between Laois and other counties. Because of the one out all out rule a non compliance in another county would result in a failure of the sub-catchment to achieve “good” water quality status by 2015. Therefore this Council consider that it would be unreasonable to be expected to be responsible for the result of actions or inactions by another local authority.</p>	<p>Where detailed measures are identified, the lead RBD Local Authority is responsible for ensuring the relevant Local authority takes the appropriate action. This responsibility is detailed in the Environmental Objectives (Surface Water) Regulations, SI 272 of 2009</p>
NS2_FPM_014	<p>Laois County Council is also concerned that as yet unknown substantial financial impositions will be placed on it to achieve the objectives of the Management Plan. As stated previously earlier the Council relies on government grant assistance to provide additional drinking water treatment and distribution systems and waste water collection and treatment facilities throughout the county. As the government meets greater demands on its reduced financial resources, this Council is concerned that some of the capital schemes may be delayed and not carried out at a time when the environmental benefits of the schemes do not become apparent. This Council</p>	<p>Comment noted</p> <p>Following an extensive programme of field work, catchment walkovers and revision to the plans only a selection of the basic and supplementary measures will be implemented at those sites where investigation and risk assessment show that specific pressures need to be remediated to restore the pearl mussels to favourable conservation status.</p> <p>Prior to the implementation of these measures a review and prioritization of the most cost effective and beneficial measures will be carried out in order to ensure no sector of society is burdened with a disproportionate share of the costs of implementation.</p>

Submission Reference No.	Issues Identified	Response
	<p>also considers that additional non capital works will have to be carried out by it to achieve the targets of the Management Plan. As the extent and nature of these actions and works are not yet known, the Council believes that there may not be adequate finance to have them carried out in an effective manner.</p> <p>Tables A & B list that river bodies that Laois County Council consider are at most risk of not meeting the required good water quality status by 2015 for reasons outside of the control of this Council. (Included in Appendix A)</p>	List noted.
NS2_FPM_016 NS2_FPM_017	<p>Cost benefit Analysis of proposed measures</p> <p>The WFD requires that cost benefit analysis of measures be carried out in such a way that environmental costs and benefits are also factored in to the analysis.</p>	Comment noted.
NS2_FPM_022	<p>With regards to the summary of measures outlined in the plans, whilst lead agencies are identified (have these agencies agreed to these measures and who will oversee these projects?). In other words has the detail of how these agencies link in been worked out?</p>	<p>This work is ongoing. A national conservation working group has been established under the aegis of the WFD's national technical co-ordination group. The conservation working group is currently focusing on the technical development of pearl mussel measures An inter-departmental WFD Directive advisory group has recently been established to look at the implementation of the plans. Regulation 14 of the Freshwater Pearl Mussels Regulation (S.I. 296 of 2009) states that the Minister shall monitor the implementation by public authorities of the sub-basin management plans.</p>
NS2_FPM_022	<p>RBD Pearl Mussel technical Group – Has this group been established?</p>	<p>The composition of these groups has been agreed by the NCWG and the invitations will be issued shortly. The RBD Pearl Mussel Technical Groups will largely be comprised of members from existing structures / bodies.</p>

Submission Reference No.	Issues Identified	Response
NS2_FPM_027	<p>The Draft Plan (RBMP) presents a list of actions in tables 6.1, 6.2 and 6.3, with the lead authority specified for the particular action. The actions specified for stakeholders or for Local Authorities are exceptionally vague, with no iterative process on the achievement of any actions. This raises the question of which authorities will enforce the plan. The plan is “made” by Local Authorities, and would therefore appear to be owned by Local Authorities. The present enforcement system sees the EPA directing the Local Authorities in respect of their operations in the wastewater and drinking water areas. The final Plan as “made” by Local Authorities should then be enforced by Local Authorities - but this is not clear in the document. Lead authorities are defined for various actions - but the question of “who chases who?” to achieve the objectives of the plan is not addressed. There is no indication of what recourse a Local Authority will have if it considers that another public body is not satisfactorily fulfilling its role in the Plan.</p>	<p>NPWS cannot comment in relation to the draft RBMPs (Tables 6.1 and 6.2).</p> <p>In relation to the Sub-basin Management Plans these are made by the Minister for the Environment, Heritage and Local Government and he will monitor and take such steps as necessary to ensure their implementation (S.I. 296 of 2009). Under the aforementioned Regulations, the Minister for the Environment, Heritage and Local Governments, the co-ordinating Local Authority and the EPA can request a report, issue advice, recommendations or assistance, direct, carry out or cause to be carried out necessary actions and initiate court proceedings against a person, public authority or body corporate that has failed to comply with their functions or duties under these Regulations.</p>

3.1.11 Monitoring and Status

Submission Reference No.	Issues Identified	Response
NS2_FPM_008	<p>ICMSA is opposed to the downgrading of river quality status based on Freshwater Pearl Mussel presence as it will result in inappropriate downgrading of watercourses. There are many factors impacting on Freshwater Pearl Mussel populations and it is imperative that further research is carried out into the causes of the decline in population. ICMSA is very concerned that additional unnecessary</p>	<p>Scientific monitoring and investigation has established that the causes of the decline of the 27 mussel populations are siltation and/or eutrophication, both of which are water quality issues. S.I. 296 of 2009 sets out that if any of the 27 populations is found to be in unfavourable conservation status because of water quality issues, the WFD status of the associated water bodies must be classified as less than good. These regulations also set out in schedule 3 the criteria for the assessment of</p>

Submission Reference No.	Issues Identified	Response
	difficult to accept that a moderate status is warranted. Consideration should be given to changing these interim designations, or an alternative status designation should be drawn up specifically for the pearl mussel catchments.	
NS2_FPM_014	Some of the sub-catchments have no water quality data recorded for them and their status is extrapolated from data in a neighbouring sub-catchment. The quantity of required work therefore cannot be estimated at this time and Laois County Council is unable therefore to give a commitment that “good” water quality status will be achieved before 2015.	The NS2 Project which was specifically established to develop the sub-basin management plans for the 27 Freshwater Pearl mussel SAC catchments in Ireland, also has an element of work which comprises of a detailed monitoring programme for each of the 27 catchments. This monitoring programme is currently being carried out by a team of ecologists, and results will be available in the finalized sub-basin plans at the end of 2009. This will establish the water quality within the pearl mussel catchments and detail the extent of the pressures on the catchment. Full details of the monitoring programme are available on www.wfdireland.ie
NS2_FPM_014	Laois County Council is concerned that all of the sub catchments affected by this plan were deemed to be less than good status in the absence of widespread testing for Filamentous Algae, Phytobenthos, Macrophytes and Siltation. Without this testing this Council cannot estimate the extent of the works it needs to carry out in order to achieve the objectives of the plan and therefore it cannot give a commitment to carry out all necessary actions to improve and maintain water quality standards.	A detailed assessment of the phytobenthos (macroalgae and diatoms), macrophytes and siltation (plus macroinvertebrates and the freshwater pearl mussel) is currently being undertaken through the NS2 Project. This will inform the measures required at a water body specific level in each of the pearl mussel catchments. This can then inform final sub-basin plans which will detail the pressures, the status, and the measures required to achieve improvement in the water quality in the catchment.
NS2_FPM_017	An Taisce welcome the introduction of annual monitoring as an essential element of any conservation management strategy, and in particular welcome the introduction of investigative monitoring. It will be essential to ensure that problems identified through investigative monitoring be incorporated in to management plans, and that resources are sufficient to allow specific problems identified to be pursued and rectified by the relevant agency. Actions taken to respond to threats identified in monitoring will need to be fully documented also and made available to interested parties.	Comment noted Local authorities are likely to be the main sources of such information to interested parties.

Submission Reference No.	Issues Identified	Response
NS2_FPM_022	<p>What is the status of the pearl mussel surveys proposed in the plans for 2009? Specifically when will the Munster Blackwater and the Allow be carried out? Will snorkel surveys be carried out on the Allow River before the end of July 2009?</p>	<p>All NS2 surveys have now been completed.</p>
NS2_FPM_022	<p>Unnatural flows – have optimal flows been identified for pearl mussels, can you please define regulated rivers?</p>	<p>Flow optima were published under a UK Life Project (see http://www.english-nature.org.uk/lifeinukrivers/index.html) and these have been further elucidated through work on an English Pearl Mussel River (not yet published).</p> <p>Regulated rivers refer to rivers where the flow is regulated for the purpose of or through water abstraction, hydro-electric power.</p>
NS2_FPM_022	<p>Regarding the survey of ongoing damage, who specifically is going to carry it out and when is it likely to be done?</p>	<p>On-going damage from roads and bridges crossing has been surveyed as part of the NS2 2009 field surveys.</p>
NS2_FPM_022	<p>Under the Water Framework Directive monitoring of fish and invertebrates is a requirement. Will known pearl mussel sites be exempted from fish surveys in particular which would involve the use of electricity and potentially result in considerable trampling of the river bed?</p>	<p>There are meeting on-going between the CFB and NPWS to resolve any potential issues.</p>
NS2_FPM_022	<p>Do you have any redox readings for the Allow?</p>	
NS2_FPM_022	<p>We carried out a short snorkel survey of St. Johns Bridge on the Allow and the results are very disturbing. Excessive <i>Ranunculus</i> growth and a considerable amount of siltation on many of the pearl mussels ~30% of the population. This silt appears to be associated with the river weed as highest deposits were generally found in close proximity of the plants. We have photos taken from this survey and we plan to compile a short report, which we can forward if this is of interest to you.</p>	<p>NPWS would greatly appreciate a copy of this report.</p>
NS2_FPM_022	<p>Munster Blackwater: Page 17 . 3.1 Summary point 4. Re.</p>	<p>This refers to a single location and was the estimate made during a</p>

Submission Reference No.	Issues Identified	Response
NS2_FPM_023	<p>Blackwater downstream of Mallow on north bank of sugar factory. Is this populations density accurate? 50 to 60 individuals per m2. This is a very high density if accurate and far higher than that presented for the Allow catchment?</p> <p>With regard to the freshwater pearl mussel, it is acknowledged that because of their longevity, pearl mussel populations are vulnerable but it should be noted that without healthy fish populations, pearl mussels would be unable to propagate. It is proposed that until scientific research indicates otherwise, equal weighting, in terms of sensitivity should be afforded to early life stages of salmonids and early life stages of the pearl mussel.</p>	<p>distribution rather than abundance survey. It is likely that mussels will have a very patchy distribution with highly variable abundances in the main channel Blackwater.</p> <p>NPWS acknowledges the sensitivity of salmonids, in particular early life stages, however each salmonid stage is present in the river for a portion of the year whereas mussels require the habitat all of the time. While salmon redds are equally demanding of highly oxygenated substratum, they are located in more mobile substratum stretches where fine sediments are less likely to deposit, they are not required throughout the year and the behaviour of the adult fish helps to remove fines.</p> <p>Evidence, including data collected as part of the NS2 Project has demonstrated ample abundance of juvenile salmonids in the mussel habitat and glochidial attachment to fish in situations where juvenile mussels are absent or their numbers inadequate. It is the opinion of NPWS that this conclusively demonstrates that the most sensitive stage is the juvenile mussels buried in the substratum and that mussel juveniles are more sensitive than early life stages of salmonids.</p>
NS2_FPM_025	<p>Extensive independent monitoring of water quality in the catchment (Bundorragha) is conducted on our behalf, with particular reference to discharges from our hatchery and sewage treatment unit. We would be willing to make this data available to the Plan authors.</p>	<p>These independent monitoring data were made available to the project team. The data will be reviewed and incorporated into the plans as appropriate. It was greatly appreciated by NPWS and the Project team.</p>
NS2_FPM_027	<p>The published document does not provide guidance on accessing, using or understanding information on water body status maps in the plan area, or on how to use the reports on water body status. The Draft Plan as presented would benefit from the addition of a user friendly guidance document, with some examples of application of the plan and an interpretation of how the measures prescribed were intended to apply to ensure consistent interpretation by</p>	<p>The Water Maps tool has been updated. Every effort will be made to assist the statutory authorities with implementation of the plan and communicate effectively with the stakeholders</p>

Submission Reference No.	Issues Identified	Response
NS2_FPM_027	<p>statutory authorities, stakeholders and general public.</p> <p>In terms of reaching “high” and “good” status, the Plan is unclear in respect of who will arbitrate on whether high/good status is met, or on what continual monitoring if any will be undertaken.</p>	<p>Under the European Communities (Water Policy) Regulations 2003, Article 10 on monitoring programmes specifies the functions of the Environmental Protection Agency. Status determination is the function of the Environmental Protection Agency. The Agency is responsible for monitoring of biological, hydromorphological, and chemical elements. They also collate data from other public authorities whom they have assigned a duty of monitoring, e.g. from the Local Authorities whom supply physico-chemical data. NPWS also contribute information on protected habitats and species and their conservation status. On the basis of all available information for a water body, and with adherence to the Environmental Quality Standards the Agency can determine which of the 5 status categories a water body falls in to.</p>
NS2_FPM_027	<p>The use of the presence of the FPM as the indicator for the classification for the Cloon river does not take any account of the status of the water body outside of the presence of the FPM and as such poses a very significant obstacle to a more balanced approach to the water quality in the catchment. Other rivers in the vicinity of the Cloon river have good status, yet do not have the FPM present. Is the system of classification reasonable, Clare County Council considers that it is not.</p>	<p>Ireland is charged to conserve the pearl mussel under the Habitats Directive (92/43/EEC). The listing of this species on Annex 2 of this Directive was based on its endangered status. Ireland must maintain or restore the species to favourable status as defined in the Habitats Directive and S.I. 296 of 2009. The pearl mussel is not being used as an indicator in this situation, rather it is being directly measured to ascertain its conservation status. To look at this in another way and to align it to WFD terminology the 130+ mussel rivers in Ireland are a specific river type with the Freshwater Pearl Mussel being an intrinsic biological component. The decline of pearl mussels in this river type represents a very significant deviation from reference conditions.</p> <p>Conservation assessment of Freshwater Pearl Mussels requires the survey of juvenile mussels which NPWS has been successfully undertaking since 2004. There is a recognised lag between the implementation of measure and successful recruitment of juveniles to the populations, although this may be as short as 2-3 years. However in recognition of this lag, environmental quality objectives have been set in the Fourth Schedule of S.I 296 of 2009 as operational monitoring tools to indicate any habitat improvements resulting from the measures implemented.</p>

Submission Reference No.	Issues Identified	Response
NS2_FPM_027	<p>The achievement of “good” status for the waters of the Cloon river designated as Margaritifera margaritifera habitats will depend on the timing of recruitment in these catchments and is unlikely to be within the prescribed 2015 deadline. This prescribed deadline is unrealistic, and it appears that there is no provision for seeking a derogation for this objective. Even if it was open to seeking a derogation, the means of doing so is unknown territory for many Local Authorities -as the specialist knowledge on the life cycle of the species is not widespread. Prediction of a realistic time frame for restoration of “good” status for these waters is guesswork. This is a significant weakness in the Draft Plan</p>	<p>Comment noted:</p> <p>The conservation assessment of pearl mussels requires the survey of juvenile mussels which NPWS has been successfully undertaking since 2004. There is a recognised lag between the implementation of measures and successful recruitment of juveniles to the populations, although this may be as short as 2-3 years. However in recognition of this lag, environmental quality objectives have been set in the Fourth Schedule of S.I 296 of 2009 as operational monitoring tools to indicate any habitat improvements resulting from the measures implemented</p>
NS2_FPM_027	<p>Has any other country included the existence of the FPM in a water body in its classification system?</p>	<p>Yes, the WFD status of river waterbodies in Northern Ireland has been downgraded as a result of the conservation status of pearl mussels. Through European and National legislation, there are many legislative links which provide for the protection of the Freshwater Pearl Mussel, the most important being the Water Framework Directive, the Habitats Directive, and the Freshwater Pearl Mussel Regulations (S.I 296 of 2009) . In the WFD there are provisions which we are obliged as a Member State to comply with – Article 4.1(c) concerning protected areas, Article 6 concerning the Register of Protected Areas, Article 8.1 concerning monitoring of protected areas and Article 13.5 concerning sub-basin management plans. It is a fact, that without achieving favourable conservation status for all of our habitats and species (not just the freshwater pearl mussel), we will not achieve the objectives of the WFD. This is true for all Member States.</p>

3.1.12 FPM SAC designations

Submission Reference No.	Issues Identified	Response
NS2_FPM_006	<p>The draft Regulations refer to the main channel of the Munster Blackwater whereas the draft sub-basin plan refer to the “catchment” of the Munster Blackwater and the maps in the sub-basin plan show the entire river to the tidal reach. This does not include the Blackwater Bride which enters the Blackwater estuary. Clarification of the extent of the proposed designation is necessary.</p>	<p>The first schedule of the regulations lists the main rivers and lakes containing <i>Margaritifera</i>, this list is not exhaustive and therefore many watercourses are omitted. The draft sub-basin plans cover the entire catchment and measures will be applied within this catchment where site specific pressures have been identified.</p>
NS2_FPM_006	<p>Consideration should be given to designating smaller parts of the Blackwater, particularly the main channel higher up in the catchment and the less intensively farmed upper reaches of tributaries.</p>	<p>The Munster Blackwater is an area designated under the Habitats Directive as a candidate Special Area of Conservation and as such is afforded the full protection of the law. The Munster Blackwater main channel is included in the First Schedule of the Pearl Mussel Regulations (S.I. 296 of 2009) and must have a Sub-Basin Management Plan prepared for it. The selection of the cSAC was based on the mussel population and did not relate to the pressures in the catchment.</p> <p>It is intended that the sub-basin plans will provide water body level specific measures and will detail the specific measures in Tables 6.1-6.3 which are applicable, plus any other measures identified as being necessary on the basis of 2009 catchment walkovers and pressures assessment and the results of biological element surveys, plus the results of revised 2009 interim status from the EPA.</p> <p>The high level of the pressures in the Munster Blackwater is appreciated. Measures will only be implemented at those sites where investigation and risk assessment show that specific pressures need to be remediated to restore the pearl mussels to favourable conservation status. Prior to the implementation of these measures a review and prioritization of the most cost effective and beneficial measures will be carried out in order to ensure no sector of society is burdened with a disproportionate share</p>

		<p>of the costs of implementation.</p> <p>The Sub Basin Management Plan are plans that are directly connected with and are necessary to the management of the SAC</p> <p>Further investigations are likely to be needed to establish the status of the pearl mussel in the Blackwater River (Cork and Waterford (002170) cSAC and, therefore, to refine the measures for this catchment.</p>
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3.1.13 Ecological Quality Objectives

Submission Reference No.	Issues Identified	Response
NS2_FPM_016 NS2_FPM_017	Table 1.2 ‘Ecological Quality Objectives’ for FPM Sites are too low, stating an objective for filamentous algae as ‘trace or present’. The presence of filamentous algae in FPM habitat would indicate nutrient levels higher than what is required for achieving favourable conservation status of the FPM. Thus setting this objective is not sufficient to achieving favourable conservation status of the FPM in [this] catchment. The wording ‘trace or absent’ would be a more appropriate as an ecological quality objective, and to exclude the word ‘present’.	The final version of the European Communities Environmental Objectives (Freshwater Pearl Mussel) Regulations, SI 296 of 2009, Fourth Schedule has been amended to include Filamentous algae (Macroalgae) ‘Absent or Trace ($\leq 5\%$)’.
NS2_FPM_027	The European Communities Environmental Objectives (Freshwater Pearl Mussel) Regulations 2008/2009 in draft, prescribes the Local Authority as the body responsible for achieving the objectives of the WFD as regards status. Therefore any actions taken by the regulator or local authority as regards compliance under these Regulations when they come into force, must be on the basis of a definite non-compliance with the sub-basin management plan. In this regard there must actually be definite policies laid down with all aspects of land use and activities within	<p>S.I 296 of 2009 sets objectives for the Freshwater Pearl Mussel and does not assign responsibility for the achievement of general WFD status. It does set the duties of public authorities in respect to the sub-basin management plans and programmes of measures. Action can be taken against a person, public authority and body corporate who has failed to comply with the Regulations by the Minister for the Environment, Heritage and Local Government, co-ordinating Local Authority or the EPA.</p> <p>Cost-effectiveness analysis will be carried out on the proposed measures and measures will only be implemented at those sites where</p>

Submission Reference No.	Issues Identified	Response
	<p>the Cloon Catchment formulated with a collaborative involvement from all parties and bodies and with their approval in not just agreeing the plan but their part in implementing aspects of it, defining and detailing measures etc. Until this is achieved, setting investigative monitoring programmes and defining timelines for achieving them are like the blind leading the blind. In essence with this sub-basin plan in its current state and it being 2009, it must be recognised that the aims for this sub-basin plan will not be achievable by 2015 but if progress is made in defining a proper working plan the way forward to meeting the objectives may be much clearer, or even clarified to the extent where a reasonable timeframe for improvement in populations of FWPM can be achieved.</p>	<p>investigation and risk assessment show that specific pressures need to be remediated to restore the pearl mussels to favourable conservation status.</p> <p>The monitoring parameters will allow us to identify improvement short of the objectives within the 2015 timeframe.</p>

3.1.14 Climate change

Submission Reference No.	Issues Identified	Response

Submission Reference No.	Issues Identified	Response
NS2_FPM_009	<p>While it is accepted that pearl mussel populations are in steady decline, the precise reason(s) for this decline appear to be somewhat less clear. In the context of the sub-basin plans, much of the blame for this decline appears to be focused on two issues: sedimentation and eutrophication/enrichment. However, notwithstanding the findings of section 1.3.1.5 of the plan, we would question whether other factors, such as climate change, might also be involved or have a more significant part to play. In this regard, for example, we would question the contention in the plans that increased rates of sedimentation are not linked to changes in flood flows brought about by climate change. It is our opinion that this particular issue needs further consideration as part of the proposed catchment-level surveys.</p>	<p>Scientific monitoring and investigation has established that the causes of the decline of the 27 mussel populations are siltation and/or eutrophication both of which are water quality issues. Climate change is also a concern for pearl mussel as for other species and habitats. The impact of climate change is most likely to exacerbate the pressures already acting on the mussels, increasing erosion and sedimentation in rivers/watercourses, through increased energy and flood events etc. and through increasing and prolonging eutrophication during drought conditions. Consequently protection from the impacts of climate change requires that the sources of both sediment and nutrients be cut off.</p>
NS2_FPM_010	<p>The impact of climate change upon salmonid populations is a major concern of the Board. The EPA Report “Climate Change – Scenarios & Impacts for Ireland found in a study of six different catchments nationwide that, “the greatest change, an annual reduction in effective runoff of approximately 25% of the baseline flow, was observed for the Slaney, the area drained by this River is in the South East of the Country where some of the greatest reductions in predicted runoff occur”. The Board do not believe that the Draft Plan addresses the significant potential impacts of global warming upon salmonid populations and linked to this populations of <i>Margaritifera</i>.</p>	<p>The impact in relation to Climate Change is discussed in section 3.1.38 of the literature review which is contained in section A of the plan. Within this section the issue in relation to the impact on salmonid populations is highlighted. As this specific issue has been raised in relation to the Derreen catchment it can be looked at further prior to completion of the final plans.</p>

3.1.15 Fisheries

Submission Reference No.	Issues Identified	Response
NS2_FPM_003 NS2_FPM_004 NS2_FPM_007	There is concern within the Boards that the Draft Management Plans appear not to adequately recognize the work undertaken by the Boards on a daily basis in protecting all elements of the aquatic environment.	Comments noted: This will be rectified in the final plans.
NS2_FPM_025	We would wish to be consulted in advance of any study or research work that involves entry to or abstraction of material from any part of the catchment (Bundorragha). In particular, we assert the right to prior approval and supervision of any survey work on fish populations within the catchment (see p.34).	A meeting was held with the fishery owner prior to the commencement of field work to discuss the various elements of the field work programme. All field survey teams will continue to provide Delphi Fisheries with advance notice of their intent to survey within the Bundorragha catchment.
NS2_FPM_003 NS2_FPM_004 NS2_FPM_007	There is further concern, that certain elements of the work we undertaken in terms of fisheries development, such as the carrying out of works to reduce or eliminate bank erosion, and works to restore or enhance aquatic habitat diversity, all of which have long term positive benefits in terms of the well being of salmonids and as a consequence FPM populations, may not always be fully understood by your personnel operating in the field.	Comment noted: Discussions on this and related topics are on-going between CFB and NPWS research staff.

Submission Reference No.	Issues Identified	Response
<p>NS2_FPM_023 NS2_FPM_034</p>	<p>With regard to the freshwater pearl mussel, it is acknowledged that because of their longevity, pearl mussel populations are vulnerable but it should be noted that without healthy fish populations, pearl mussels would be unable to propagate. It is proposed that until scientific research indicates otherwise, equal weighting, in terms of sensitivity should be afforded to early life stages of salmonids and early life stages of the pearl mussel.</p>	<p>NPWS acknowledges the sensitivity of salmonids, in particular early life stages, however each salmonid stage is present in the river for a portion of the year whereas mussels require the habitat all of the time. While salmon redds are equally demanding of highly oxygenated substratum, they are located in more mobile substratum stretches where fine sediments are less likely to deposit, they are not required throughout the year and the behaviour of the adult fish helps to remove fines.</p> <p>Evidence, including data collected as part of the NS2 Project has demonstrated ample abundance of juvenile salmonids in the mussel habitat and glochidial attachment to fish in situations where juvenile mussels are absent or their numbers inadequate. It is the opinion of NPWS that this conclusively demonstrates that the most sensitive stage is the juvenile mussels buried in the substratum and that mussel juveniles are more sensitive than early life stages of salmonids.</p> <p>NPWS while acknowledging the sensitivity of salmonids, does not accept that they are as sensitive to nutrient enrichment and siltation as mussels.</p>

Submission Reference No.	Issues Identified	Response
NS2_FPM_026	<p>Section 4.2.1 of the report states that '<i>flow management due to power generation may be affecting juvenile mussel survival</i>' and also '<i>It is important that flow is kept as close to natural levels as possible</i>'. This is of concern to ESB as ESB are very interested to see what recommendations are forthcoming in relation to either the sequence of the freshet release regime and/or analysis of river flow regimes. Of course the flow regime will have to prove beneficial to both the migratory fish as well as the resident pearl mussel populations, without causing any negative effects upon power generation. However, as things currently stand, the hydro scheme is generally self regulating with regard to river flows and floods, as the spillway gates have been removed and fixed weirs have been installed. If necessary, details of the management and operation of the Clady river hydro-electric scheme will be made available to the Department of Environment, Heritage and Local Government.</p>	<p>Under Task 6 of the NS2 project a programme of fieldwork was designed to investigate such pressures due to morphological alteration. In this instance fishery experts will carry out a programme of electrofishing across all 27 catchments to assess whether the adult pearl mussels are reproducing and releasing their <i>glochidia</i> (Larval stage of the freshwater pearl mussel) which attach to the gills of salmonids. Once this element of the field work is completed we will be able to assess the data in relation to this pressure and make a scientifically robust decision in relation to the required measures.</p> <p>We will use information from other rivers, nationally and international to support issues on river flows.</p> <p>Details in relation to the management and operation of the Clady river hydro-electric scheme have been requested from ESB FC.</p>
NS2_FPM_026	<p>In addition to section 4.2.1, there are a number of measures listed in Table 6.2, such as:</p> <ul style="list-style-type: none"> <input type="checkbox"/> <i>Impassable barriers remediation schemes.</i> <input type="checkbox"/> <i>Impassable barriers investigation.</i> <input type="checkbox"/> <i>Abstractions – to be determined following further investigation enabling review or setting of compensation flow requirements and selection of the appropriate supplementary measures on a site specific basis.</i> <p>Consequently, ESB would hope like to be involved in any investigations that could affect the operation of the Clady Hydro Scheme.</p>	<p>A national conservation working group has been established under the aegis of the WFD's national technical co-ordination group. The conservation working group is currently focusing on the technical development of pearl mussel measures. All measures will be developed giving close consideration to the economic consequences of implementing such measures together with the overall consequences in relation to the long term running of the Clady Hydro Scheme. Any measures which could potentially affect the power station will be fully discussed with ESB.</p>

Submission Reference No.	Issues Identified	Response
NS2_FPM_026	ESB FC intend to carry out an electrical fishing survey of both the Clady and Crolly catchments during the late summer of 2009. The primary purpose of these surveys has been and will be to assess the juvenile fish populations. ESB understands that whilst it will be too late in terms of glochidia attachment, the results of this and previous surveys, if deemed relevant, will be made available to the Department of Environment, Heritage and Local Government.	Any survey information which ESB FC have and can make available to the DEHLG for the purposes of the Freshwater Pearl Mussel Sub-Basin Management Plans would greatly benefit and add to the overall investigations. The results of the 2009 electrofishing surveys carried out by ESB FC have now been supplied to project and will be incorporated into the final plans where appropriate.

3.1.16 Peat cutting

Submission Reference No.	Issues Identified	Response
NS2_FPM_009 NS2_FPM_027	It is difficult to see what role, if any, local authorities might have in regulating, controlling or prohibiting peat cutting. It is difficult to see what role, if any, local authorities might have in regulating, controlling or prohibiting peat cutting. How could Clare County Council enforce such measures?	The role of Local Authorities under the Water Pollution Acts means that they must ensure peat cutting, like all potentially polluting sectors, must not cause water pollution. The most likely pollution from peat cutting is release of fine (peat) sediment, which has very significant negative impacts on pearl mussels and requires some form of control.
NS2_FPM_022	Peat Cutting – Why is peat cutting identified for the Allow catchment. Is there significant peat cutting?	Peat cutting was not identified in section 4 of the draft Allow plan as a significant pressure. It was referred to in Table 6.3, which was generic across all plans. It was important to ensure that Table 6.3 was comprehensive as we could not have confidence in having identified the full range of pressures or their significance prior to field survey. .

Submission Reference No.	Issues Identified	Response
NS2_FPM_027	In the Cloon catchment it would be assumed that any peat cutting would be on a relatively small private scale. According to the FWPM measures regarding peat cutting, it does not indicate the scale to which the measures apply. If they do cover all scales of peat cutting, the measures suggested may be somewhat impractical and certainly difficult to enforce. Any peat cutting in the Cloon would be carried out by individuals who have possibly been 'going to the bog' for years. The actual impact from such small-scale activities would require the development of a risk assessment where all local conditions of the area are included.	The 2009 fieldwork will identify areas of peat cutting that pose a significant risk to the mussel populations. This risk assessment will consider the significance of the source in terms of scale, location in relation to the receptor and the pathway. As a result all areas of peat cutting activities will be considered regardless of scale and measures will be implemented where necessary.

3.1.17 General comments on data, measures etc

Submission Reference No.	Issues Identified	Response
NS2_FPM_005	<p>A critical element of this process, in our view, is that any new measures for the protection of the FPM should be publicised and / or notified to farmers in the affected areas, including the location and extent of the lands to which FPM measures apply.</p> <p>While DAFF will endeavour to integrate the requirements of the FPM management plans into cross-compliance and other measures as appropriate, it can only do so effectively if farmers are aware (a) that their lands are designated or otherwise subject to the provisions of the FPM plan and (b) the nature of the obligations that FPM legislation / plans place on them.</p>	<p>Comments noted:</p> <p>The National Conservation Working Group is currently considering a number of mechanisms by which agricultural measures may be implemented and acknowledges the importance of good and early communication with farmers.</p>

<p>NS2_FPM_006</p>	<p>It is noted that “throughout 2009, a series of field investigations and further risk assessments will be conducted in order to verify the pressures identified as well as to locate other pressures in the catchments”...and the final pearl mussel plans which are due for publication in December 2009 will contain a list of the precise measures...” .</p> <p>This presents a difficulty for Cork County Council in the assessment of the current draft management plans, as it is not clear where and what measures will be required and thus the impact on Council resources.</p> <p>Also the Draft Sub-Basin Management Plans make no attempt to apportion the damage of the individual contributors to the overall problem that endangers the freshwater pearl mussel species. Therefore, it is difficult to be satisfied that the measures suggested in Table 6.3 are proportionate to the problem that is being caused by that contributor in the first instance</p> <p>It is also of significant concern to Cork County Council that the implementation of measures referred to in Table 6.3 is on the assumption that measures set out in Tables 6.1 and 6.2 have been complied with. The requirements of measures in Tables 6.1 and 6.2 have significant resource requirements yet to be addressed to be fully compliant.</p> <p>This would indicate that the measures identified in the final plans will be a commitment on the part of the Cork County Council without assurance that the measures can be progressed or complied with.</p> <p>Cork County Council would see the development of liaison with NPWS on production of implementation plans as a necessary requirement.</p>	<p>Comments noted:</p> <p>Measures will be only be implemented at those sites where investigation and risk assessment show that specific pressures need to be remediated to restore the pearl mussels to favourable conservation status. Prior to the implementation of these measures a review and prioritization of the most cost effective and beneficial measures will be carried out in order to ensure no sector of society is burdened with a disproportionate share of the costs of implementation.</p> <p>Local Authorities can participate in the RBD Conservation Groups and, through the RBD representative (SW RBD Co-ordinator), in the National Conservation Working Group. Their on-going participation is welcomed.</p>
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<p>NS2_FPM_006</p>	<p>It is considered that the understanding of what causes eutrophication in river habitats and in turn impacts on the biology of the FPM is not fully understood. While a number of correlation factors can be demonstrated, what are causal factors may be less clear.</p> <p>Notwithstanding the need to continuously improve water quality and ecological quality, it has been stated that “the habitat of <i>Margaritifera margaritifera</i> in Ireland is restricted to near natural, clean flowing waters” ...nutrient levels must be close to the reference levels for the rivers they inhabit ...the populations of most international concern are those with populations between 500,000 and 3,000,000. These are populations within catchments that were near pristine up until very recent times, but have declined within the lifetime of their designation as SACs, although much of their decline may have been the result of activities occurring before designation”.</p> <p>This presents difficulties in determining to what extent management measures are required, how far to take these measures and the issue of environmental precautions versus management affordability / viability.</p> <p>Against an uncertain evidence base of required environmental standards to support the recruitment of the pearl mussel, the practicality of restoring the entire (Munster) Blackwater catchment to pristine quality would be unacceptable and at least questionable in terms of the significant economic and social impacts.</p> <p>It is considered that resources would be applied to an area where there is a questionable return.</p> <p><u>Recommendations</u></p> <ul style="list-style-type: none"> ● Proceed on the basis of looking at pilots, starting 	<p>Eutrophication is a complex and extremely well researched topic. There is sufficient scientific knowledge on the effectiveness of measures to reduce eutrophication and to support the implementation of scientifically based, cost-effective measures in the sub-basin plans</p> <p>The Blackwater River (Cork/Waterford) cSAC (maps available at www.npws.ie is an area designated under the Habitats Directive as a candidate Special Area of Conservation (002170) and as such is afforded the full protection of the law. The Munster Blackwater main channel was designated for the pearl mussel and therefore had to be included within SI 296 of 2009 and must have a Sub-basin Management Plan prepared for it. The selection of the cSAC was based on the mussel population and did not relate to the pressures in the catchment. The Sub Basin Management Plans are plans that are directly connected with and are necessary to the management of the cSAC.</p> <p>Sub-basin Management Plan measures will be applied to target areas within the pearl mussel catchments. It is intended that the sub-basin plans will provide water body level specific measures and will detail the specific measures in Tables 6.1-6.3 which are applicable, plus any other measures identified as being necessary on the basis of 2009 catchment walkovers, pressures assessment, the results of biological element surveys, and the results of revised 2009 interim status from the EPA.</p> <p>The high level of the pressures in the Munster Blackwater is appreciated. Measures will only be implemented at those sites where investigation and risk assessment show that specific pressures need to be remediated to restore the pearl mussels to favourable conservation status. Prior to the implementation of these measures a review and prioritization of the most cost effective and beneficial measures will be carried out in order to ensure no sector of society is burdened with a disproportionate share of the costs of implementation.</p> <p>Local Authorities can participate in the RBD Conservation Groups and, through the RBD representative (SW RBD Co-ordinator), in the National Conservation Working Group.</p>
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	<p>with the smaller catchments, e.g. Ownagappul and Allow.</p> <ul style="list-style-type: none"> • Designate smaller parts of the Blackwater, particularly the main channel higher up in the catchment and the less intensively farmed upper reaches of tributaries. • Develop liaison with NPWS on production of implementation plans. 	
NS2_FPM_009	<p>It is our belief that the plans, as currently formatted, are too general in nature and lack specific detail in relation to the measures that are considered appropriate/necessary at individual catchment level. Notwithstanding the fact that a suite of, what are termed, supplementary measures have been prepared and are included in the plans, there is, as yet, no definitive information available in relation to the precise measures that may apply within each individual catchment. It is our understanding that detailed catchment survey work will be carried out over the coming months, and that this will inform and dictate the measures considered appropriate to each catchment. In the absence of this information, however, it would be very difficult for Kerry County Council to support the findings and recommendations of these draft plans at this stage. The view could be taken, therefore, that publication of the drafts at this time is premature pending the carrying out of the necessary catchment-level survey work.</p>	<p>Comments noted: The specific details will be presented in the final plans.</p> <p>Local Authorities can participate in the RBD Conservation Groups and, through the RBD representative (SW RBD Co-ordinator), in the National Conservation Working Group.</p>

NS2_FPM_009	<p>In keeping with the requirements of the Water Framework Directive, The core objectives relating to protected areas (including the pearl mussel catchments) must be achieved by 2015. It is our opinion that this particular deadline is unlikely to be met and is therefore over-ambitious, particularly in the current economic climate. Notwithstanding the difficulty in ensuring that all appropriate measures are implemented by that date, it is likely that any positive impacts associated with implementation of these measures may take many years to become evident. Given the natural life-cycle of the Freshwater Pearl Mussel, it is unlikely that the required improvements in the population age-profile will become evident for some considerable time.</p> <p>In addition to the above, it is likely that competing priorities will also have an impact on full attainment of all objectives. In this regard, it is worth pointing out that, from the local authority perspective, protection of drinking water sources (ref. protected areas objectives) and implementation of the Drinking Water Directive (ref. basic measures) will take priority over most, if not all other objectives.</p>	<p>Comments noted:</p> <p>The conservation assessment of pearl mussels requires the survey of juvenile mussels which NPWS has been successfully undertaking since 2004. There is a recognised lag between the implementation of measures and successful recruitment of juveniles to the populations, although this may be as short as 2-3 years. However in recognition of this lag, environmental quality objectives have been set in the Fourth Schedule of S.I 296 of 2009 as operational monitoring tools to indicate any habitat improvements resulting from the measures implemented.</p> <p>We appreciate there are many compelling calls on resources, but it is extremely important that all of Ireland’s obligations under the WFD, Habitats Directive and other relevant legislation are honoured.</p>
NS2_FPM_009	<p>In addition to the suite of basic and supplementary measures that have been proposed in the draft River Basin Management Plans, the Draft Freshwater Pearl Mussel Sub-Basin Plans also propose a series of further measures (Table 6.3) that will be considered “where investigations and risk assessment show that specific pressures need to be remediated to restore pearl mussels to favourable conservation status.” The plans also contain a statement that “Priorities and specific timelines for implementation of the selected measures will be detailed in the final plan.” It is our understanding, therefore, that the decision as to which further measures should be implemented at an individual catchment level will not be taken until such time as detailed surveys of the catchments in question</p>	<p>Comments noted:</p> <p>Local Authorities can participate in the RBD Conservation Groups and, through the RBD representative (SW RBD Co-ordinator), in the National Conservation Working Group level.</p> <p>It should be noted under SI 296 of 2009, the Sub-Basin Management Plans do not require adoption by the Local Authorities but rather direct approval by the Minister for Environment, Heritage and Local Government. We encourage the on-going participation of the Local Authorities in the process of developing these plans.</p>

	<p>have been completed. In these circumstances, it is difficult to see how local authorities could be expected to approve adoption of the Draft Sub-Basin Management Plans without clear knowledge of the likely suite of measures which will need to be implemented for each affected catchment.</p>	
NS2_FPM_009	<p>The document also contains the following statement – “The policy or regulatory framework for the implementation of some of these measures does not currently exist and will need to be developed.” Again, it would be difficult for any local authority to approve adoption of the Sub-Basin Management Plans in the absence of details on the format and possible implications (financial and otherwise) of any proposed policies/legislation.</p>	<p>Comments noted: An interdepartmental WFD Advisory Committee has recently be established to examine issues relating to implementation of the RBMPs and SBMPs. It should be noted under SI 296 of 2009, the SBMPs do not require adoption be the Local Authorities but rather direct approval by the Minister for Environment, Heritage and Local Government. We encourage the on-going participation of the Local Authorities in the RBD Conservation Groups and, through the RBD Representative (Co-ordinator for the South West RBD), in the National Conservation Working Group.</p>
NS2_FPM_009	<p>Leisure Management - it is difficult to see what role, if any, local authorities might have in this area.</p>	<p>The Local Authorities role relates to the management of public access to pathways along rivers.</p>
NS2_FPM_010	<p>The EIS for the Tullow Sewerage Scheme upgrade identified populations of <i>Margaritifera</i> in the Slaney Main Channel downstream of the Derreen confluence. The EIS described this population as a downstream continuation of the Derreen population, and stated that the area had good physical habitat structure of cobble and gravel. The Board asks what measures / if any are proposed to protect these and other populations in the Slaney main channel and other tributaries such as the Bann.</p>	<p>NPWS is prioritising its efforts to restore the freshwater pearl mussel in the 27 SAC populations listed on the First Schedule to SI 296 of 2009. All freshwater pearl mussels are protected under the Wildlife Act (1976) as amended. This makes hunting or other injury of the species, as well as interference with or destruction of its habitat an offence.</p>
NS2_FPM_012	<p>The Geological Survey of Ireland has previously supplied information and contributed to technical reports for a number of draft (WFD) Management Plans. Two reports that are likely to have been of use to the management of freshwater pearl mussels are:</p> <ul style="list-style-type: none"> • The Calcareous/Non-Calcareous (“Siliceous”) 	<p>Comment noted</p>

	<p>Classification of Bedrock Aquifers in the Republic of Ireland. Paper for the Working Group on Groundwater, Guidance Document No. GW3.</p> <ul style="list-style-type: none"> • Further Characterisation Study: An Integrated Approach to Quantifying Groundwater and Surface Water Contributions of Stream Flow. <p>This information may provide additional useful information to the specific river water quality data that have already been used in these plans.</p>	
NS2_FPM_016	<p>Figure 3.5 is not clear in its relation to Table 3.1 on the previous page. The latter presents that two out of 5 monitoring sites are below Q4, but neither of these are presented on the map on the following page, which would suggest that all 5 monitoring sites are Q4. This reason for this discrepancy is not clear from the plan.</p>	<p>Comment noted.</p>
NS2_FPM_019	<p>We have further failures in pursuing forestry related pollution from industrial discharges, but again these infringements are allowed to go unchallenged and unexamined, probably because the same departments of natural resources department control the regional fisheries boards as well. It is unlikely that one arm of the department will pursue another for pollution offences and as a result the water is left unprotected.</p> <p>The complaints of FISSTA members continue to fall on deaf ears for these reasons and no matter what plan for freshwater mussels is devised, it is safe to say the species is doomed unless this serious fault in the system is rectified now.</p> <p>Please address this failure in the system before any plan is proposed.</p>	<p>Forestry is regulated by the Forest Service of the Department of Agriculture, Fisheries and Food, whereas the Central and Regional Fisheries Boards are part of the Department of Communications Energy and Natural Resources</p> <p>It is a duty on all public authorities listed on the Second Schedule to SI 296 of 2009 to take such steps as are necessary and appropriate to the discharge of its functions to implement the measures identified in the sub-basin management plans.</p> <p>NPWS is working closely with both the Forest Service and the fisheries boards to develop and implement the measures.</p>

NS2_FPM_022	Other sources of silt – is the local authority the appropriate lead here?	Fisheries Boards will be added to this and the Local Authorities will be retained in their role of implementing the Water Pollution Acts
NS2_FPM_027	For the novice user, or an interested person seeking to understand how the objectives of the Plan can be achieved within the specified time frame for a particular area, the Draft Plan (RBMP) is user unfriendly. The various Tiers of the Plan include the use of the www.wfdireland.ie web site. The speed of response of the site is very variable, and requires good broadband access which is not yet facilitated in all the plan areas. There is no clear way for an interested person, without specialized knowledge of water sciences or information technology, to get local information on quality status, risk status, and POMS proposed, for water bodies in his/her own area.	The Water Maps tool has been updated. Comment noted.
NS2_FPM_027	The time frame specified for the implementation of actions (with projected improvement in water quality status) actions is aspirational and unrealistic. It is necessary to take account of the normal time frame for implementation of programmes – including contract scoping, environmental and habitat assessments, planning (via An Bord Pleanala with an average of one year being taken per application), tendering, department approval, re-tendering, construction, commissioning. Realistically, it is also necessary to take account of economic cycles including the current recession. Furthermore, the current National Water Pricing Policy requires a Local Authority to provide a very significant percentage of the capital cost of water infrastructure, for which several cash-strapped Local Authorities simply don't have the cash to meet their share of the costs. The Cloon catchment is a predominantly rural area, with a mix of farms and individual one-off housing. It is difficult to envisage it being realistic to provide one or more waste water treatment plants, considering the long lines of sewerage network that	Comments noted: It is not envisaged that the final plan will include a proposal for a Waste Water Treatment Plant in the Cloon. Inspection and up-grading of on-site systems (septic tanks etc) will need to be undertaken. Properly functioning on-site waste water treatment systems are likely to have less impact on water quality than municipal waste water treatment facilities.

	would be necessary, and the likely pumping costs to move waste water over these long distances to the treatment plant(s). The Cloon river itself would most likely be the only realistic watercourse into which an effluent outfall would discharge, and questions may arise as to its assimilative capacity and the standards which effluent would have to attain to avoid damaging the river's FPM population.	
NS2_FPM_027	The Draft Plan does not indicate how the changes will be made to the basic and supplementary measures when the status is confirmed. Will this be by material contravention of the Plan, by informal amendment, or by Ministerial direction? Who will carry out this change?	NPWS do not fully understand the issue raised here. The SBMPs are developed by the NPWS in consultation with relevant public authorities and are subject to the approval of the Minister for the Environment, Heritage and Local Government. The conservation status of the 27 mussel populations has been re-assessed in 2009 and this will feed into the EPA's review of interim WFD status. WFD status will be reported to the Commission in 2011 and will be based on the most up-to-date monitoring data (including mussel conservation status). Member States will next formally report on status in 2015, and every six years thereafter. The EPA will also be producing an interim-classification every three years in between. The results of all classification reports will feed into and be used to help focus the Programmes of Measures, for both the RBMPs and SBMPs.
NS2_FPM_027	The Plan needs to be accessible to developers, staff in all public bodies, vested interest groups, and stakeholders generally to enable scoping of the range of studies which are required for a development. Up to now a developer could easily check whether an EIA was required for a development. There is also published guidance for sub-threshold development, and Section 5 applications (under the Planning Act 2000) handle queries regarding the need for planning permission. The plan needs to be able to deliver the right answer to queries at the earliest stage of development e.g Do I need an appropriate assessment under the Habitats Directive? Do I need to consider a Bathing Water catchment/Drinking Water catchment/Urban Waste Water Treatment Plant/IPPC licence/Protection of groundwater contributing to	<p>Comment noted</p> <p>The National Conservation Working Group is considering all options to ensure that all necessary information and guidance is supplied by the Lead Authorities for the implementation of the measures.</p>

	surface water etc. The Draft Plan, as written, does not adequately provide the user with these answers.	
NS2_FPM_027	We (Clare County Council) believe that it is impossible in the short term to achieve the requirements proposed by the draft Regulations, i.e. by 2015. In the long term it may be possible but so expensive and socially disruptive as to be unacceptable. There would be a good argument that the common good would be better served by not achieving the required good status for the Cloon river in terms of the populations of FPM due to the excessive costs involved and in addition the social effects of the very stringent measures required for this purpose.	NPWS believe that these comments are premature in advance of the final plans and full cost effectiveness analysis.
NS2_FPM_027	The measures outlined are based on information that is not complete and will only be completed later in 2009. As such it is generally difficult to comment and give views on information, which may be speculative. In addition it would be very difficult (if not impossible) for the executive of Clare County Council to recommend to the members of Clare County Council to vote to adopt such measures based on information which may prove to be speculative. It is not clear where and what measures will be required and thus the impact on Council resources.	Comments noted. It should be noted under S.I. 296 of 2009, the Sub-basin Management Plans do not require adoption by the Local Authorities but rather direct approval by the Minister for Environment, Heritage and Local Government. NPWS encourage the on-going participation of the Local Authorities on the RBD Conservation Groups and, through the RBD Representative (Co-ordinator for the South West RBD), in the National Conservation Working Group.
NS2_FPM_027	The implementation of these additional measures would pose very significant additional burdens on the human and financial resources of Clare County Council. There is also a significant risk that in any event that the required good status for the water body under this plan could not be achieved due to the unknown length of time that would be required to re-establish FPM population growth and also to be able to accurately measure positive progress in this regard. The document states that the plan objective is to bring	Comments noted: There is a recognised lag between the implementation of measures and successful recruitment of juveniles to the populations, although this may be as short as 2-3 years. However in recognition of this lag, environmental quality objectives have been set in the Fourth Schedule of S.I 296 of 2009 as operational monitoring tools to indicate any habitat improvements resulting from the measures implemented. Under the Water Framework Directive it is a legal requirement that the objectives of protected areas be achieved.

	<p>the catchment and thus the population back to favourable condition. Clare County Council does not consider that the draft plan as presented will ensure that the population will or can be brought back to favourable condition within the 6 year time period allowed. However we do acknowledge that notwithstanding the issue regarding the FPM that the general objectives of the WFD for the Cloon river catchment should be implemented.</p> <p>We would respectfully suggest more time is taken to assess accurately the measures required for the protection of the FPM, and the balance between social and economic need versus the need to promote the species, before such drastic and uncertain measures are implemented. If implemented strictly over the envisaged short period, FPM measures could have serious implications for the credibility and repute of the river basin management plans as a whole.</p>	<p>Measures will only be implemented at those sites where investigation and risk assessment show that specific pressures need to be remediated to restore the pearl mussels to favourable conservation status. Cost-effectiveness analysis will be carried out on the proposed measures.</p>
NS2_FPM_027	<p>One fundamental issue apparently missing in this draft plan is the methodology as to how the proposed measures are to be implemented within a collaborative framework amongst responsible bodies and stakeholders. This is the ethos on which the water framework directive is based.</p>	<p>A National Advisory Committee has recently been established to develop mechanisms for the implementation of all Water Framework Directive measures.</p>
NS2_FPM_027	<p>There is vagueness and lack of detail of how to go about arranging and adopting measures on the ground.</p>	<p>A National Advisory Committee has recently been established to develop mechanisms for the implementation of all Water Framework Directive measures.</p>
NS2_FPM_027	<p>Also where the LA adopt and try to impose these measures there must be a sound and legislative backing, e.g. as is the case with the Water Pollution Act there must be proof of pollution and impact to the waterbody. This can be difficult to prove to a judiciary who will take account of one off occurrences and take account of presented human predicaments. However the document states that even</p>	<p>A National Advisory Committee has recently been established to develop mechanisms for the implementation of all Water Framework Directive measures.</p>

	one significant event can have serious impacts and ramifications on FWPM populations. Therefore there must be some clear guidance to LA's as to how to successfully enforce/achieve the sub-management plan and programme of measures.	
NS2_FPM_027	The main pressures identified as to the impacts on FWPM are sedimentation and nutrient inputs where the sources of these are discussed. However there is no quantitative evaluation as to which source produces the greatest effects within the specific catchments. Therefore it is difficult to assess which measures will need to be prioritised and applied more rigorously and what the cost of this will be.	The 2009 field surveys included morphological survey and catchment walkovers. The results of these surveys will be presented in the final plans and will be used to develop targeted measures for the final plans.
NS2_FPM_027	The months June to September seem to be very important in the lifecycle of the FWPM where the glochidia are mobile as such within the water body. Are there any particular measures/actions that could be imposed during this time period of the year so as to give them a better chance for survival and successful breeding?	As noted in the draft plans, the most sensitive stage of the pearl mussel is post glochidial attachment when juvenile mussels are buried in the substrate. It is critical that measures are focused on restoring this juvenile mussel habitat that is required by the pearl mussel throughout the whole year.
NS2_FPM_027	Is there an optimum level of Salmon populations that should be present in the water body for better potential for glochidia survival? As Salmon are the host fish and are imperative to the lifecycle of the glochidia there is little reference as to the importance in populations of Salmon or how their populations could be managed in the future.	This issue has been researched as part of the 2009 fieldwork and the results have been incorporated into the final plans.
NS2_FPM_027	Some measures refer to 'sensitive sites', which are assumed to mean the vicinity of the FWPM beds themselves. The interpretation tends towards the possibility of imposing the measures within the vicinity of the 'sensitive areas' however the specifics of this are not defined, i.e. does it relate to a certain sized buffer area. The catchment itself is mostly gley and peat soils, (see Figure 1 and Figure 2 below),	Sensitive areas refer to areas that could be significant sources e.g. of nutrients and/or sediment and may not necessarily be adjacent to mussel habitat. In identifying sensitive areas factors including soil type, slope and land use etc. need to be considered.

	<p>which have tendency for poor drainage due to the impermeable soils and erodability leading to sedimentation with certain activities. The catchment has quite a number of feeder streams to the main channel and much drainage throughout the land feeding into the first and second order streams. Therefore, impacts from anywhere in the catchment could potentially affect the main channel and the FWPM, therefore the proposed measures would have to be imposed across the whole catchment as opposed to a limited buffer zones which may in effect miss out on areas of contribution to the whole potential impact. Has this been quantified, as to the area of potential impact, at certain distances away from the main channel (and FWPM beds) for all type of land use, with due consideration to soil types, slopes and catchment size, in this case 56.2km²?</p>	
NS2_FPM_027	<p>Unnatural flows, remediation of morphological pressures, peat cutting, etc., it refers to ‘<i>at the specific sites where they are required</i>’. Where and how are these sites determined and how are their locations to be related to the Local Authority? Will there be a natural process of relaying of this information by the lead bodies involved in their determination to the L.A.?</p>	<p>Field work during 2009 Many of these sites will be identified in the final plans. Where further investigation by NPWS, Local Authorities and other public authorities identifies such sites, the results must be made available to all relevant public bodies.</p>
NS2_FPM_028	<p>It is noted that in the river some Mussel shells have been eaten by a parasite that sticks onto the shell and eats its way into the interior. This parasite has a sucker that helps it to adhere onto the shell.</p>	<p>The observed “damage” to the shell is natural erosion of the umbone (the oldest part of the mussel shell) by river water. This natural erosion is variable across <i>Margaritifera</i> rivers and is dependent on the pH of the water.</p>

Editorial*- Text within the relevant Freshwater Pearl Mussel Sub-Basin Management Plan will be altered accordingly.

